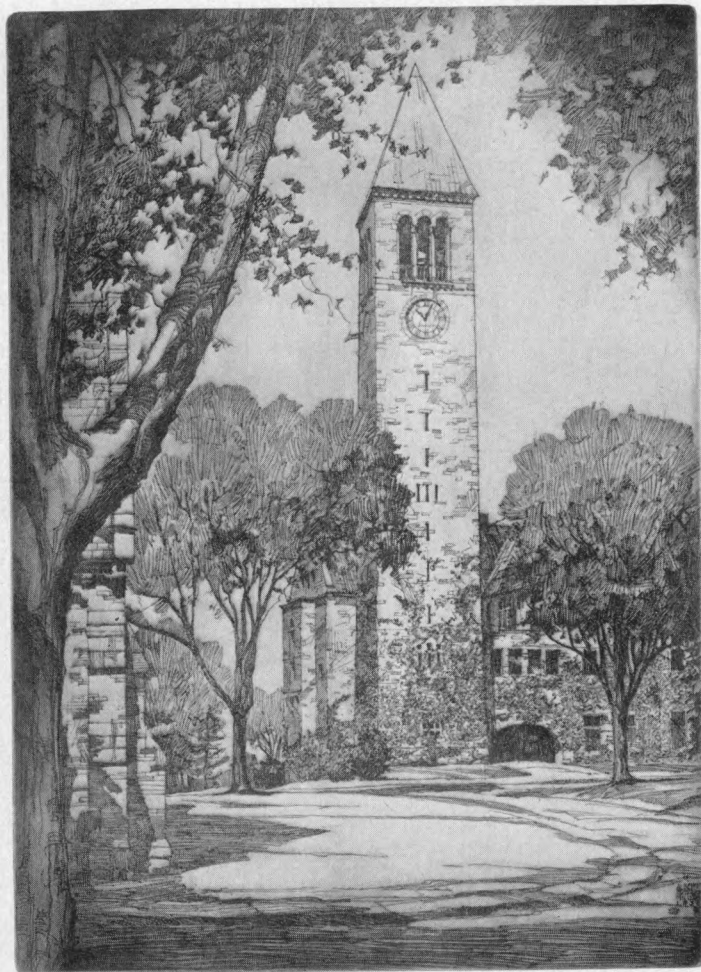


Announcement of the

CORNELL UNIVERSITY SUMMER SESSIONS: 1942

UNIVERSITY AND STATE SUMMER SCHOOLS



CORNELL UNIVERSITY OFFICIAL PUBLICATION
VOLUME 33 : MARCH 1, 1942 : NUMBER 14

CALENDAR FOR THE SUMMER OF 1942

SUMMER SESSIONS

MAY 25-JUNE 27

First five-week Summer Session. The courses are primarily for students now in residence, but others may be admitted. Advance registration will be required.

JUNE 29-AUGUST 8

Six-week Summer Session. The courses of the usual Summer Session of previous years will be offered in this period.

JUNE 29-SEPTEMBER 12

Eleven-week Summer Session. Courses are primarily for undergraduates. Freshmen may be admitted at this time to some of the Colleges of the University. For information on entrance at this time, the prospective student should address the Director of Admissions. Persons registering in this Session may take part of their courses in the six-week Session and in the second five-week Session.

AUGUST 10-SEPTEMBER 12

Second five-week Summer Session. Courses are primarily for graduates and advanced undergraduates, but others may be admitted.

SUMMER TERMS

JUNE 1-SEPTEMBER 12

Summer Terms in the Law School, the Colleges of Engineering and Architecture, and the New York State Veterinary College. Address all correspondence with regard to these to the Secretary of the School or College concerned.

JULY 6-SEPTEMBER 22

Summer Term of the Medical College. Address all correspondence with regard to this to the Dean of the Medical College of Cornell University, 1300 York Avenue, New York, N. Y.

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Announcement of the
SUMMER SESSIONS
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1942

PUBLISHED BY THE UNIVERSITY

ITHACA, NEW YORK

MARCH 1, 1942

CALENDAR OF THE SIX-WEEK AND ELEVEN-WEEK SESSIONS

- JUNE 29, MONDAY Registration, 8:30 a.m.-12:30 p.m., 1:30 p.m.-5 p.m., Barton Hall. Fees are due for payment at the Treasurer's office, Morrill Hall.
- JUNE 30, TUESDAY Instruction begins at time and place announced for each course. Registration is continued at the Registrar's office, Morrill Hall.
- JULY 3, FRIDAY Last day for payment of fees at the Treasurer's office, which closes at 4 p.m., Morrill Hall.
- JULY 4, SATURDAY University holiday.
- AUG. 7, FRIDAY Final examinations of six-week Session begin; schedule on page 56.
- AUG. 8, SATURDAY Six-week Session ends, 4 p.m.
- SEPT. 11, FRIDAY Final examinations of eleven-week Session begin.
- SEPT. 12, SATURDAY Eleven-week Session ends, 4 p.m.

SPECIAL COURSES

- JUNE 15, MONDAY Summer Field Course in Geology begins, Spruce Creek, Pennsylvania.
- JUNE 22, MONDAY First unit courses in Hotel Administration begin, 9 a.m., Martha Van Rensselaer Hall.

WEEKLY CALENDAR

A weekly calendar is issued and posted on each Saturday of the six-week Session. This carries all official notices and gives details of all public events, such as concerts, lectures, excursions, etc. Copies may be obtained upon request at the desk of Willard Straight Hall, at the Summer Sessions office, and at other University offices.

SUMMER SESSIONS OFFICE

Between June 25 and September 15 the Summer Sessions office is located in Room 245 Goldwin Smith Hall. The office will be open from 8 a.m. to 4 p.m., daily except Saturday; on Saturday the office will close at 12 noon. During the rest of the year the Summer Sessions office is located in Room 249 Plant Science Building.

CORNELL UNIVERSITY OFFICIAL PUBLICATION

PUBLISHED BY CORNELL UNIVERSITY AT ITHACA, N. Y.

Monthly in September, October, and November
Semi-monthly, December to August inclusive

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To meet the demands of the present emergency, Cornell University will offer this year a greatly expanded summer program of instruction. This program is planned: 1, to serve the purposes of the usual Summer Session; 2, to afford to students in the various Schools and Colleges an opportunity to carry on their studies during the summer period in order to graduate earlier; 3, to provide to some students completing their high school courses in June the opportunity to enter college at that time; and 4, to furnish to men about to enter national service instruction in subjects directly related to their future duties. To serve these different purposes the summer program has been arranged in two ways. In some of the Schools and Colleges instruction will be given in terms of the usual length; in others, courses will be offered in shorter Summer Sessions.

SUMMER TERMS

The Law School, the Colleges of Engineering and Architecture, and the New York State Veterinary College will each offer instruction for a full term of fifteen weeks, beginning on June 1 and ending on September 12. Their programs of courses are arranged primarily for both old and new students regularly admitted to these Schools and Colleges, but students enrolled in similar institutions elsewhere may apply for admission. All inquiries with regard to any feature of the summer terms of any of these Schools and Colleges should be addressed to the Secretary of the School or College concerned.

The Medical College of the University, located in New York City, will also offer continuous instruction through the summer period. Since the work in that College is now organized on a three-term basis, a summer term of eleven weeks, to begin on July 6, will be added to the present program. All inquiries with regard to the summer program of the Medical College should be addressed to the Dean of that College, 1300 York Avenue, New York City.

SUMMER SESSIONS

The expanded program of the College of Arts and Sciences, the New York State College of Agriculture, and the New York State College of Home Economics will be offered in four Summer Sessions, one of six weeks, two of five weeks each, and one of eleven weeks. The calendar of these is given on the inside cover page. In the six-week Session, which will begin on June 29, the usual series of courses for teachers, school administrators, and graduate and undergraduate students will be given.

In the eleven-week Session, which will also begin on June 29, courses primarily intended for undergraduates in the College of Arts and Sciences will be offered, but students in other Colleges of the University and in other institutions may be admitted to these courses. In arranging these courses special attention has been given to the needs of pre-medical and pre-dental students and of students planning to make chemistry or physics their major study. A special schedule for freshmen has been arranged, and students qualifying before June 29 for admission to the College of Arts and Sciences may

enter this Session and by eleven weeks of summer work complete twelve hours of the usual freshman schedule. Students registering in the eleven-week Session may take courses in the six-week and second five-week Sessions as part of their programs of study. For information on entrance to any college of the University at this time, the prospective student should address the Director of Admissions.

The first five-week Session, which will begin on May 25, will offer courses primarily for undergraduates now in residence, but others may be admitted. The list will include technical courses for men about to enter national service. Advance registration for all courses in this Session will be required. The second five-week Session, which will begin on August 10, will offer a limited series of courses for advanced undergraduates, graduates, and others; in most cases these will be continuations of courses offered in the six-week Session.

ADMISSION

Application for admission to the Summer Sessions of 1942 must be made on the special form printed on the last pages of this Announcement. In most cases the information called for on this form will be sufficient. However, undergraduates registered in institutions other than Cornell University will be required to submit evidence of good standing and approved programs of study before they are admitted, and other applicants may be asked to furnish additional information. **Applications for any Session should be filed at least two weeks before the opening date**, and late applicants who are admitted may unavoidably be delayed in registration. **A certificate of admission signed by the Director is a prerequisite for registration in any of the Summer Sessions.**

The work of the Summer Sessions is planned to put the facilities of the University at the disposal of those persons who can use them to good advantage and for serious purposes during the summer period. Admission, however, cannot be granted to persons inadequately trained for the work they propose, or whose records in Cornell University or elsewhere are unsatisfactory; neither will admission be granted to persons whose purposes seem inadequate or inappropriate or better served by other work at other institutions. All applications will be acted upon promptly, but early application is urged.

ADMISSION TO THE GRADUATE SCHOOL

A student planning to become a candidate for an advanced degree from Cornell University must also apply for admission to the Graduate School. For this, two requirements are made: (1) the applicant must have received a baccalaureate degree from a college or university of recognized standing, or must have done work equivalent to that required for such a degree; (2) as judged by his scholastic record, or otherwise, the applicant must show promise of ability to pursue advanced study and research.

A student who wishes to enter the Graduate School should file application for admission, together with all the required supporting credentials, in the Office of the Dean of the Graduate School as early as possible; for the six-week and eleven-week Summer Sessions, this should not be

later than June 1. Application must be made on the formal blanks obtainable from the office of the Graduate School, and must be accompanied by complete and official transcripts of the student's previous training.

Because of the time required to secure and evaluate transcripts and other records, a period of two to four weeks usually elapses between the receipt of an application and formal action upon it. Every effort will be made to render decisions promptly, and applicants can assist materially by making early applications.

Students planning to apply for admission to the Graduate School should read the section on the Graduate School beginning on page 9. Further information is given in the Announcement of the Graduate School, which will be sent by the Secretary of the University upon request.

REGISTRATION

Registration for the six-week and eleven-week Sessions of 1942 will take place on Monday, June 29, in Barton Hall; the hours for registration will be from 8:30 a.m. to 12:30 p.m. and from 1:30 p.m. to 5 p.m. Students are urged to register on this day. Advance registration for these Sessions, either in person or by mail, cannot be arranged. For information about registration in the two five-week Sessions, see pages 62 and 64.

Registration is required for admission to any of the exercises of any of the Summer Sessions. In addition, all women students must register with the Counselor of Students. Registration of automobiles to be driven in and about Ithaca by Summer Sessions students is also required.

REGISTRATION IN THE GRADUATE SCHOOL

Students who wish to obtain credit toward the advanced degrees of Cornell University for Summer Session work should arrange for admission to the Graduate School by correspondence in advance. They will then, on registration day, register in the Graduate School. Students whose applications and credentials for admission to the Graduate School are received after June 8 will not be able to register in the Graduate School on registration day, June 29. They will register in the Summer Sessions on that day and, after consulting members of the faculty in their proposed fields of graduate study, begin at once their programs of work. They will register in the Graduate School in Morrill Hall immediately after receiving notice of favorable action on their applications.

GRADUATES NOT REGISTERING IN THE GRADUATE SCHOOL

Students registered in the Graduate Schools of other institutions and planning to obtain credit toward the advanced degrees from those institutions by their Summer Sessions work do not register in the Graduate School. Before registering in the Summer Sessions they should arrange for the crediting of their Summer Sessions work by the institutions from which they plan to take the degrees. Other students who hold bachelor's degrees but are not candidates for advanced degrees also register in the Summer Sessions only.

SCHEDULES

All students in the six-week and five-week Sessions are required to take courses amounting to four semester hours, unless an exception is granted by the Director. The normal schedule for these Sessions is six semester hours, and undergraduates must secure permission to register for fewer or more hours. The normal schedule for the eleven-week Session is twelve semester hours and except by permission of the Director all students are required to register for at least nine semester hours.

REGISTRATION

FOR ATTENDANCE Under certain circumstances teachers and other mature students, not candidates for degrees, may receive permission to register for some or all of their courses for attendance only. Students so registered are required to attend regularly and to perform the class work of the courses, but they will not be permitted to take the final examinations. They will receive no credit for these courses but may secure certificates of attendance in courses so registered for. Registration for attendance cannot be changed to registration for credit after the second week of any Session.

LATE

REGISTRATION Students reaching Ithaca on June 30 or later to enter the six-week and eleven-week Sessions will register at the following times and places: all students, with the Registrar, at his office in *Morrill Hall, between 9 a.m. and 4 p.m.*; graduate students, also with the Dean of the Graduate School at his office in *Morrill Hall, at the same hours*; all women students, also with the Counselor of Students at *1 Sage Avenue, between 9 a.m. and 4 p.m.*; owners and drivers of automobiles, also with the Campus Patrol Office, *between 8:30 a.m. and 4:30 p.m.* Graduate students who expect to receive residence credit toward an advanced degree for Summer Sessions work should register with the Dean of the Graduate School within the first week of the Session.

CHANGES OF

REGISTRATION All changes of registration in the six-week and eleven-week Sessions after Monday, June 29, must be made in the Summer Sessions office, 245 Goldwin Smith Hall. Except by permission of the Director, no changes of registration in these Sessions may be made after Friday, July 3.

AUDITORS

Admission to classrooms during the Summer Sessions is restricted to students registered for that Session. A student thus duly registered may occasionally visit any class; but if he wishes to attend regularly at classes for which he is not registered, he must secure an auditor's permit. Such permits will be granted whenever the student can show a serious purpose in such attendance. Auditors are not required to take part in the work of the courses which they visit, and certificates of attendance cannot be issued to them.

Auditor's permits cannot be issued on registration day; they may be secured on Tuesday, June 30, and later, at the Summer Sessions office.

WITHDRAWAL FROM THE SUMMER SESSION

A student may arrange for withdrawal at any time by cancelling his registration at the Summer Sessions office, 245 Goldwin Smith Hall. In such cases, the Treasurer may refund a part of the tuition fee or cancel a part of the obligation that the student has incurred for tuition, provided the reason for the withdrawal is stated in writing and is satisfactory to the Treasurer and the Registrar. In such cases in the six-week Session the student is required to pay twenty per cent of the term's tuition for each week or fraction of a week between the first registration day and the date of his certificate of withdrawal, **unless the withdrawal is made before noon on Thursday, July 2.**

CERTIFICATES OF SUMMER RECORD

Students in the Summer Sessions may receive certificates of attendance or of work performed, with grades. Application for them should be made at least three days before the end of the Session, and the applicant must leave at the office of the Registrar a large-sized envelope stamped and directed to his home address. The certificate will then be forwarded by mail.

ACADEMIC

CREDIT

All courses offered in the Summer Sessions, excepting some of the unit courses of one or two weeks in length, are accepted for credit in one or more of the Schools and Colleges of the University, when taken by matriculated students in those Schools and Colleges. No student may receive credit for more than eight semester hours for work done in the six-week Session, or for more than six semester hours in a five-week Session.

UNDERGRADUATE AND

GRADUATE COURSES

There is, in general, no sharp distinction at Cornell University between undergraduate and graduate courses. In this Announcement each course is marked immediately after the title in one of three ways:

Undergraduate. These courses are intended primarily for undergraduates. Students registered in the Graduate School of Cornell University will not receive credit for these courses toward an advanced degree unless such credit is specifically recommended by the special committee in charge of their work.

Graduate. These courses are intended primarily for students who are candidates for advanced degrees, and for teachers and others who wish certification to accrediting agencies for work done at the graduate level. Undergraduates with adequate preparation may register for these courses only after receiving permission from the instructors in charge.

Undergraduate and graduate. These courses are open to graduates and advanced undergraduates. Graduates registering for these courses who are candidates for advanced degrees or who wish certification to accrediting agencies for work done at the graduate level must indicate on their registration blanks their intention to complete the course at the graduate level and must be prepared to do any additional work that may be required.

COLLEGE OF ARTS

AND SCIENCES

To obtain credit towards the Bachelor of Arts degree for work done in a Cornell Summer Session, a student must previously have filed with the University Director of Admissions credentials covering the entrance requirements of the College of Arts and Sciences. He should then, in advance of Summer Sessions registration, secure the Dean's approval of his selection of courses. The academic requirements for the degree of Bachelor of Arts are explained in detail in the Announcement of the College of Arts and Sciences.

The Summer Sessions records of students registered in the College of Arts and Sciences are reviewed by the usual standing committees of the College, and poor records in the Summer Sessions are liable to the same penalties as in the regular University session.

COLLEGE OF

ENGINEERING

Students in the College of Engineering who desire to offer work done in the Summer Sessions toward requirements for graduation should consult the Director of the School in which they are regularly registered before registering in the Summer Sessions. Students not yet matriculated in the College of Engineering, but planning to enter it, may obtain information about its requirements by applying to the Secretary of the College of Engineering.

STATE COLLEGES OF

AGRICULTURE AND
HOME ECONOMICS

Students in the State Colleges of Agriculture and Home Economics must consult with an adviser and secure his approval to the proposed schedule of courses if credit in those Colleges is to be secured. Advisers will be in Barton Hall on registration day, June 29, and may be consulted at their offices on June 30 or later.

DEPARTMENT OF

HOTEL ADMINISTRATION

Students in the Department of Hotel Administration who desire to offer work done in the Summer Sessions towards requirements for graduation should consult Professor Meek of that department before registering in the Summer Sessions.

INSTITUTIONS OTHER THAN

CORNELL UNIVERSITY

The foregoing regulations apply to undergraduate students matriculated at Cornell University. Undergraduates enrolled in other institutions and wishing to have credits earned in the Summer Sessions applied on their work at such other institutions should, before coming to Ithaca, consult their own college authorities and make all arrangements by them deemed necessary. The Cornell Summer Sessions can assume no responsibility for the use to be made of credits earned by students thus coming from other places of study. The certificates mentioned above will show what courses have been taken, the amount of credit in terms of Cornell "hours," and the grades.

THE GRADUATE SCHOOL

APPLICATION FOR ADMISSION A student planning to apply for admission to the Graduate School should write at once to the Dean of the Graduate School for a copy of the Announcement of that School and for the blanks required for applications for admission. The Announcement gives full information about the advanced degrees granted by Cornell University, including the language requirements for admission and for some of the advanced degrees; residence and course requirements; and other information not given in the following sections.

Applications for admission to the Graduate School should be filed by June 1 if possible. After admission to candidacy for a degree, the student may write in advance of the opening of the Session to professors whose courses he plans to take. In this way it is possible to secure advice with regard to major and minor subjects, or fields of concentration, and information about course requirements in specific fields, and to avoid delay and interruption of work at the opening of the Session.

REQUIREMENTS FOR

MASTER'S DEGREES The requirements for the degrees Master of Arts, Master of Science, and Master of Science in Agriculture consist of three parts: (1) a minimum period of residence; (2) completion of such courses and other work (under Plan A, including a thesis) as may be specified by a special committee selected by the student to direct his work; (3) competence in scholarship, tested by a final examination.

RESIDENCE

REQUIREMENTS The minimum residence requirement for the Master's degrees mentioned above is two semesters of residence at Cornell University. This minimum requirement may be satisfied by five Summer Sessions of six weeks, or one semester and three Summer Sessions of six weeks, at Cornell University. The eleven-week Session will be considered the equivalent of two six-week Sessions. Candidates for these degrees who are in residence during Summer Sessions are also expected to continue their studies during the year under the direction of the chairman of the special committee in charge of their work.

SUBJECT MATTER

REQUIREMENTS The subject matter requirements for the Master's degrees mentioned above may be satisfied in two ways. Each student, when applying for admission to candidacy for a Master's degree, should indicate which of these two plans of work he wishes to follow:

PLAN A

The candidate selecting this plan chooses a major subject of rather limited scope (e.g., French Literature, American History, Botany, Physical Chemistry) to which he plans to devote the greater part of his time. He also selects a minor subject properly related to the major subject. He then selects from the faculty of the Graduate School a member to rep-

resent each of his subjects; these constitute his special committee, and the representative of the major subject acts as chairman. The candidate then files with the Dean of the Graduate School a statement of his major and minor subjects approved by the members of his special committee. This statement must be filed within one week after registration.

The candidate then and from time to time thereafter confers with the members of his special committee, and with their help outlines a program of work which meets the requirements for the degree he expects to earn. These requirements will include achievement in independent investigation supported by a thesis acceptable to the student's special committee. In addition to course examinations, the candidate is required to pass a final examination comprehending the thesis and the major and minor subjects.

PLAN B

The candidate selecting this plan chooses a field of concentration of broader scope (e.g., Biological Sciences, Social Studies, English, Foreign Languages, Home Economics), to which he plans to devote at least half of his time. He also selects a group of subjects within which he plans to distribute the remainder of his work. He then selects two members of the faculty to serve as his special committee. One of these, who is chairman of the committee, represents the field of concentration; the other may be chosen from either that field or some related field, depending on the candidate's program. The candidate then files with the Dean of the Graduate School a statement of his field of concentration approved by the members of his special committee. This statement must be filed within one week after registration. The candidate then and from time to time thereafter confers with his special committee, and with their help outlines a program of work which meets the requirements for the degree he expects to earn.

The subject matter requirements under this plan include the satisfactory completion of approved studies carrying a minimum of thirty semester hours of credit, of which approximately one half will be in the field of concentration and the rest will be variously distributed with the sanction of his special committee. Work acceptable within the field of concentration must be devoted in substantial part to studies requiring original investigation, organization, and criticism on the part of the student. The candidate is not required to present a formal thesis; but if he does not do so, he is required to complete an expository or critical essay, or a problem in research, to the satisfaction of his special committee. In addition to course examinations, the candidate is required to pass a final examination comprehending the field of concentration and the distributed studies.

REQUIREMENTS FOR THE DOCTOR'S DEGREE

The requirements for the Doctor's degree include a reading knowledge of French and German, tested by a special examination. A major subject and two minor subjects are chosen, and a thesis is always required. The residence requirement for the Doctor's degree may, upon recommendation of the student's special committee, be fulfilled in part by attendance during the Summer Session. For this purpose, three six-week Summer Sessions will be regarded as the

equivalent of one semester, and five six-week Summer Sessions as the equivalent of one year.

Candidates for the Doctor's degree should in all cases consult the Announcement of the Graduate School for a more complete statement of the requirements.

COMPLETION OF

REQUIREMENTS Candidates for advanced degrees who expect to complete requirements and to take their final examinations at the end of a Summer Session should call at the office of the Graduate School well in advance for the necessary instructions and blanks.

REGISTRATION FOR

RESIDENCE CREDIT To obtain residence credit in the Graduate School for Summer Sessions work the student must register both in the Summer Sessions and in the Graduate School; and such registration should be completed within the first week of the Session.

CANDIDATES IN THE SCHOOL OF EDUCATION

The School of Education in its administration of graduate work functions as a division of the Graduate School of the University with the same requirements for admission save as to foreign languages. Two professional degrees are offered. (1) The Master of Education (M.Ed.) degree is intended primarily for those who complete, through a newly-established five-year program, the pre-service requirements for admission to teaching. (2) The Master of Science in Education (M.S. in Ed.) degree is intended primarily for those who already hold certificates to teach but who wish to prepare themselves for some specialized form of educational service, such as administration, supervision, or guidance. In general, the program does not demand the extensive research required of a candidate under Plan A of the regular Master's degree and permits a broader selection of courses. For further information regarding the requirements for these degrees, consult the Announcement of the School of Education, which will be sent upon request.

NON-CANDIDATES

A student admitted to the Graduate School as a non-candidate selects an adviser to direct his work. He then files with the Dean of the Graduate School not later than one week after registration a statement, approved by his adviser, of the studies he plans to pursue.

RESIDENT DOCTORS

Persons who hold a Doctor's degree or have equivalent standing may, subject to permission from the Dean of the Graduate School, register as resident doctors to carry on advanced work in their special fields of study. Upon recommendation of the Dean of the Graduate School resident doctors are exempt from the payment of tuition and all other fees except laboratory fees. With the exception of advanced courses closely related to their fields of work, resident doctors may not attend courses without the payment of tuition.

FEES

All fees are due and payable at the Treasurer's office in Morrill Hall on the first day of each Session. The last day for payment of fees without penalty is the fifth day of each Session.

TUITION FEES

The tuition fee for any one of the six-week and five-week Sessions is \$60: for the eleven-week Session, \$120. For unit courses of one to three weeks in length, the tuition fee is \$12 a week. If unit courses extending through six weeks are taken, the tuition fee will be \$60. Special fees are charged for individual instruction in music, tennis, and a few other subjects.

The tuition fee for students registered as candidates for a degree in the Graduate School of Cornell University is \$60 for any one of the six-week and five-week Sessions; \$80 for an eleven-week combination of Sessions; and \$100 for the full sixteen-week period.

MATRICULATION FEE

A matriculation fee of \$10 and an examination book fee of \$1 are charged if the student is registering for the first time in the Graduate School of Cornell University, unless the student, as an undergraduate in Cornell University, has already paid these fees. A student registering in the Summer Sessions but not in the Graduate School does not pay these fees unless he is at the same time registering for the first time as a candidate for a degree from one of the other Schools or Colleges of the University. For further information about these fees, the *General Information Number*, which may be obtained from the Secretary of the University upon request, should be consulted.

OTHER FEES
AND DEPOSITS

All Summer Session students will also pay a health service, infirmary, and Willard Straight Hall fee. This fee is \$4.50 for any one of the six-week and five-week Sessions and \$9 for the eleven-week Session.

All undergraduates in Cornell University will also pay a physical education fee of \$1.50 for any one of the six-week and five-week Sessions, and of \$3.00 for the eleven-week Session.

A fee of \$1 is charged to those students who receive from the Campus Patrol Office the privilege of parking motor vehicles on the campus.

A deposit of \$5, refundable when all books have been returned, is required for the withdrawal of books from the University library.

Laboratory, shop, field-trip, and incidental fees are charged for materials used and for other expenses in certain courses. The amounts of these fees are specified in the descriptions of the courses in which they are charged.

Deposits refundable upon return of apparatus, etc., are required in certain courses. The amounts of these deposits are specified in the descriptions of the courses in which they are charged.

Special fees are charged for individual instruction in music and for the use of practice facilities. For the amounts of these fees, see under the description of courses in music.

A fee of 10 cents a period is charged for the use of the University tennis courts and of the University swimming pool in Beebe Lake, adjacent to the campus.

OTHER REGULATIONS

CONCERNING FEES If a student withdraws from a Summer Session, the Treasurer may refund a part of the tuition fee or cancel a part of the obligation that the student has incurred for tuition, provided the reason for the withdrawal be stated in writing and be satisfactory to the Treasurer and the Registrar. In such cases in the six-week Session the student is required to pay twenty per cent of the term's tuition for each week or fraction of a week between the first registration day and the date of his certificate of withdrawal **unless the withdrawal is made before noon on Thursday, July 2.**

Students registering at any time during the last five weeks of the six-week Summer Session are required to pay for the remainder of the term at the rate of twenty per cent of the term's tuition for each week or fraction of a week between the date of registration and the last examination day of the term.

Any student, graduate or undergraduate, except as hereinafter provided, who fails to pay his tuition, fees, and other indebtedness, or if entitled to free tuition fails to claim the same at the Treasurer's office and pay his fees, within the time prescribed by the University is thereby dropped from the University. When in his judgment the circumstances in a particular case so warrant, the Treasurer may allow an extension of time to complete payments. For such extension, the student will be assessed a fee of \$2. A reinstatement fee of \$5 will be assessed in the case of any student who is permitted to continue or return to classes after being dropped from the University for default in payments. For reasons satisfactory to the Treasurer and the Registrar, which must be presented in writing, the above assessment may be waived in any individual case.

Any tuition fee or other fee may be changed by the Trustees to take effect at any time without previous notice.

SPECIAL REGULATIONS

CONDUCT AND SCHOLARSHIP The Summer Sessions are conducted under the general regulations governing conduct and scholarship which apply to all sessions of the University. Students are expected to familiarize themselves with dormitory and other rules and to abide by them.

The University rules governing student conduct are:

"A student is expected to show both within and without the University unfailing respect for order, morality, personal honor, and the rights of others. The authority to administer this rule and to impose penalties for its violation is vested in the University Committee on Student Conduct. The rule is construed as applicable at all times, in all places, to all students of the University."

"A student may at any time be removed from the University if, in the opinion of the Committee on Student Conduct, his presence is not conducive to the University's best interests."

The officers of the University also reserve the right to cancel the registration of any student at any time for neglect of scholastic duties.

AUTOMOBILE REGULATIONS

Because of local traffic and parking conditions it is necessary to require registration of both motor vehicles and their drivers during the Summer Sessions, as well as during the academic year. Each student who maintains or operates a motor vehicle in or about Ithaca during the Summer Sessions must register with the Campus Patrol Office at the time of registration for courses. He will at the same time register the motor vehicle which he proposes to drive.

Because of limited parking facilities, it is necessary to restrict the privilege of parking motor vehicles on the campus to those students who apply for and receive special permits. These permits are issued by the Campus Patrol Office to those students whose need for them is greatest, and application for them should be made at the time of registration. The fee for a parking permit is \$1 for a five-week or six-week Session; \$2 for the eleven-week Session or a longer period.

CASHING OF CHECKS

The Treasurer of the University accepts checks in settlement of charges payable at his office, but a rule of the Board of Trustees forbids him to cash any credit instrument, even to the extent of accepting a check or draft in amount greater than the sum due and returning the excess in cash. Students are therefore advised to open an account in an Ithaca bank as soon as they arrive in town, or else provide themselves with travelers' checks, drafts on New York City banks, money orders, or other form of credit instrument such as a bank will cash in the ordinary course of business.

FOREIGN STUDENTS

The University maintains on its staff a Counselor to Foreign Students whose duty is to look after the welfare of all students from other countries. It is suggested that all foreign students write to him before coming to Ithaca, or call upon him soon after arrival. He will be glad to help them find suitable living quarters and assist them with introductions. Letters of this kind should be addressed to Mr. Donald C. Kerr, Counselor to Foreign Students, Cornell Cosmopolitan Club, Ithaca, N. Y.

LIVING QUARTERS

ROOMS FOR WOMEN

The University has two groups of residential halls for women in which board and room can be obtained during the Summer Sessions by registered students only. They are:

The *Balch Halls* accommodate 318 students and will be opened primarily to accommodate older and more mature students. Here the charge for the six weeks for room and a specified amount of laundry, is from \$32 to \$47, according to the size and location of the room. These halls are in four units, each unit under the charge of a Head Resident and having each its separate

reception hall, living room, and dining room. Units Three and Four will be available for the 1942 Summer Sessions. The halls are thoroughly fireproof and of modern construction and appointment. In addition to ample bathrooms in all corridors, each room or pair of rooms has a hand lavatory with running water. In some cases the lavatory serves two rooms which communicate with it on either side but which are otherwise separate from each other. Meals will not be served in Balch Halls during the 1942 Summer Sessions. Board may be obtained in Willard Straight Hall or at the cafeteria in Martha Van Rensselaer Hall, or in the Risley Hall dining room.

Risley Hall, which accommodates 194 persons. Here the charge for room, board, and a specified amount of laundry, for the six-week Session, is from \$84 to \$93, according to the size and location of the room. Charges for the five-week and eleven-week Sessions are approximately in proportion.

All women students who are twenty-one years of age and under are required to live in the University dormitories or sorority houses. This regulation applies to any students who are undergraduates at Cornell University or other colleges. Graduate women students may also secure rooms in the same residences or in other houses approved by the Counselor of Students. The list of approved houses will be available after June 1 on application to the *Manager of Residential Halls*.

In the residential halls for women the charge for room and board for the six-week Session includes dinner and lodging Saturday night, June 27 (not earlier), and all meals to and including breakfast Sunday, August 9.

Members of the six-week Session who lodge outside Risley Hall may obtain table board at that hall for \$9 a week.

The Head Residents in charge of the halls are glad to know the students, to advise them in illness or other emergency, and to give them whatever information they wish about the University or the town. It is understood that persons living in the halls will conform to the house regulations made for the convenience and comfort of all.

ROOMS FOR MEN

Men regularly enrolled in the Summer Sessions can obtain comfortable rooms in the *Residential Halls for Men*, which are thoroughly modern and of fireproof construction.

In the *Residential Halls* the charge for furnished room, including care of the room and laundry of bed linen, is from \$18 to \$30 for the six-week Session. There are a few suites at a higher rate, and a few rooms on the top floor may be had for less. Charges for the five-week and eleven-week Sessions are approximately in proportion.

A list of private houses offering desirable rooms for men for the Session can be obtained after June 1 by application to the *Manager of Residential Halls, Morrill Hall, Ithaca, N. Y.*

APPLICATIONS

FOR ROOMS Applications for rooms in any of the residential halls, either for women or for men, and for rooms in the approved houses for women, should be made to the *Manager of Residential Halls, Morrill Hall, Ithaca, N. Y.* Floor plans of the residential halls and other

information about the rooms may be obtained, before making applications, by addressing the same office.

Since there are several Summer Sessions beginning on different dates, as well as Summer Terms beginning on June 1, **all inquiries and applications for rooms should state the exact dates between which rooms are to be occupied.**

HOUSES AND

APARTMENTS Information about living quarters in private houses and apartments is also furnished upon request. This includes a list of rooms for women in private houses; a similar list of rooms for men; a list of apartments and private houses for rent; and a map of Ithaca to show the location of these places with reference to the campus. These lists are prepared about June 1 and may be obtained by addressing the *Manager of Residential Halls*.

DEPOSITS WITH

APPLICATIONS *A deposit of five dollars* must accompany each application for a room in any of the residential halls; otherwise the application will not be entertained. The rooms are reserved in the order of application. If a room assigned is occupied by the applicant, the amount of the deposit is held until the end of the Session to cover the return of keys and any damage to building or furniture other than ordinary wear and tear, and to insure the completion of the lease. The deposit will be refunded if the applicant gives formal notice to the Manager on or before June 15 that the applicant wishes to withdraw the application.

Checks should be drawn to the order of Cornell University.

DINING ROOMS,

CAFETERIAS Women who are members of the Summer Sessions and who reside outside Risley Hall may obtain table board at that hall for \$9 a week. The dining rooms and cafeteria of Willard Straight Hall and the cafeteria in Martha Van Rensselaer Hall are open to both men and women students. Board may be obtained at these places and at cafeterias, dining rooms and restaurants near the campus at \$1.25 to \$1.75 per day.

COST OF LIVING

An estimate of the cost of living in Ithaca in the summer can be made by consulting the figures given above. In private houses rentals vary according to the location. Rooms are rented with the understanding that they will be occupied for the entire Session unless both parties agree otherwise. Table board is generally engaged by the week.

MEANS OF

SELF SUPPORT Opportunities for students to earn part of their expenses during the Summer Sessions are rare. Women who wish information on the subject should address Miss Thelma L. Brummett, Counselor of Students, Cornell University. Those who desire dining room work may write directly to the Manager of Residential Halls. Men may

write to the University Placement Bureau, Willard Straight Hall, Cornell University.

LIBRARIES

THE UNIVERSITY LIBRARY is open on week days from 7:50 a.m. to 10:30 p.m. In this building are the main library, containing about 800,000 volumes, and most of the seminary and special libraries. Students properly qualified are allowed the use of the seminary rooms and the books in them. The main collection is primarily a library of reference for use in the building. Students are, however, to a limited extent, allowed to take out books for home use. Persons wishing this privilege must make a deposit of \$5, which will be refunded upon the return of all books taken out.

THE LIBRARY OF THE COLLEGE OF AGRICULTURE, in Stone Hall, is open on week days from 8 a.m. to 10 p.m., except Saturday when it is closed at 5 p.m. In it will be found a large collection of bulletins and reports of experiment stations, reference books on agriculture and country life, agricultural periodicals, and the like. The entomological library in Comstock Hall is one of the most complete of its kind in the United States. Nearly all of the departments in which instruction is given have well-selected departmental libraries.

THE LIBRARY OF RECORDED MUSIC and scores to parallel these recordings is available in the Music Building for the use of the general student body. This library may be used in the Music Building only, during the hours 9 a.m. to 5 p.m. and 7 p.m. to 10 p.m. daily except Sunday, and on Sunday afternoons from 2:00 p.m. to 5:00 p.m.

HEALTH SERVICE

The Student Medical Clinic at 7 Central Avenue will be available for all registered Summer Sessions students. There will be a physician in attendance six hours each day from 10 a.m. until 1 p.m. and from 2 p.m. until 5 p.m. except Saturday and Sunday. Saturday hours at the Clinic will be 10 a.m. to 1 p.m.; Sunday, from 10 a.m. to 11 a.m. A nurse will be in attendance from 1 p.m. to 2 p.m. each weekday. Those desiring to consult a physician after 5 p.m. weekdays or on Saturday afternoons and Sundays for an emergency illness or accident may go directly to the Cornell University Infirmary where a physician will either be on duty or will be summoned. The night service is not intended for the use of those who could visit the Clinic during the day time.

Emergency room call service will be available at a charge of three dollars for night visits and two dollars for day visits. Requests for room visits will be cleared through the Student Medical Clinic, 3331-2336, during the day and through the Infirmary switchboard, Ithaca 2747, after 5 p.m. on weekdays, Saturday afternoons, and Sundays. Patients requiring more than one emergency visit for any one illness will not be treated in their rooms but will be requested to go to the Infirmary.

The University Infirmary will be open for the reception of ill students requiring hospital care. Two days bed, nursing, and ordinary medical care will be granted without extra charge for each student registered in a five-

week or six-week Summer Session. Per diem rates in the Infirmary for registered students beyond the exemption period will be two dollars in a ward and three dollars in a room. There will be no additional charge for extended ordinary medical care. The health fee does not include visiting surgical care, consultation fees, special nursing service, x-rays, or medication.

If a student, while in the Infirmary, wishes to avail himself or herself of a private physician from the visiting staff, he or she is at liberty to do so. A student may also receive medical care from private physicians from the City of Ithaca rather than consult the Clinic. In either case this service is not included in the health fee.

RECREATION AND

PUBLIC EVENTS

WILLARD STRAIGHT HALL, the student union of Cornell University, is the gathering place for students and faculty. It is the social center of the University. The building contains lounges for men and women, activity rooms for student meetings, rooms for games and for classes in folk dancing, the University Theatre where motion pictures and dramatic productions are given each week, a billiards and game room for men, a barber shop for men, a browsing library well stocked with books of general interest, and an art room. On the upper floors of the Hall are sleeping rooms used principally by parents and guests of students, by alumni, and by guests of the University. The dining rooms—main dining room, sandwich room, cafeteria, and soda bar—occupy the entire floor below the main floor.

Willard Straight Hall is for the use of members of the University; but guests of members may secure guest cards for limited periods upon application to the Director of the Hall.

LECTURES

A public lecture, open to all Summer Sessions students, is given each Monday evening of the six-week Session. The lecturers are distinguished members of the faculty and the subjects are chosen for their general interest and timeliness. Each Wednesday evening several public lectures are given on subjects of more restricted interest in connection with the work of various departments.

SAGE CHAPEL

Religious services are conducted in Sage Chapel throughout the academic year by clergymen of various religious denominations. There will be services in the Chapel on five Sundays during the Summer Sessions, July 6 to August 2 inclusive.

CONCERTS

A series of five Thursday evening concerts will be given in Bailey Hall at 8:15 p.m. during the six-week Session. These Thursday evening concerts are free to all students and members of the faculty.

CHORUS

All members of the Summer Sessions who are interested in singing in a chorus of mixed men's and women's voices, are asked to meet

in the choir loft of Sage Chapel on Thursday afternoon, July 2, at five o'clock. At this time a schedule of rehearsals will be arranged in accordance with the desires of those interested. The chorus will be directed by Richard T. Gore, Assistant Professor of Music and University Organist.

CHAMBER

ORCHESTRA The String Sinfonietta, Ronald Ingalls, conductor, which plays throughout the regular academic year, will rehearse regularly during the Summer Session and will play one concert. Members of the Summer Session who wish to join this organization should apply to Professor Ingalls at Barton Hall on Monday, June 29, or at his office in the Music Building as soon thereafter as possible.

SUMMER

THEATRE During the six-week Session performances are given by the Summer Theatre Company on Friday and Saturday evenings. The performances are given in the theatre of Willard Straight Hall; an admission charge is made. The plays to be produced will be announced each week in the Weekly Calendar.

The plays of the Summer Theatre Company are directed by Professors Drummond and Stainton, assisted by other members of the Direction Staff. Regularly enrolled members of the courses in Dramatic Production, and no others, may compete for places in the casts and production staffs; detailed announcements will be made in the various classes.

MODERN

ART FILMS Selections from Modern Art Films will be presented weekly by the Summer Theatre. Noteworthy recent foreign films are included in the series. Tickets for the series will be on sale in Willard Straight Hall.

DEMONSTRATIONS AT

THE OBSERVATORY

A series of demonstration lectures, illustrated by observations with the 12-inch telescope when the weather permits, will be given on Monday, Wednesday, and Friday evenings throughout the six-week Session at the Fuertes Observatory. During the first week of the Session these lectures will be open to all registered students; admission after the first week will be by tickets which may be obtained at the Summer Sessions office. For further information see page 24.

EXCURSIONS

Excursions in connection with the work of certain departments are made to many points of interest. Some of them are open to all members of the Summer Sessions. Especially noteworthy are the excursions conducted by the Department of Geography and Geology to the Chemung River cut-off at Elmira, to Watkins Glen, and to Lake Ontario. Details of the plans for these are given on pages 37 and 38.

Certain field trips conducted by members of the Department of Botany are open to interested persons upon application. Further information may be obtained at the Summer Sessions office.

DANCES

Each Saturday evening a dance, open to all members of the Summer Sessions, is held in Willard Straight Hall. Instruction in folk dancing and social dancing is given each week by competent instructors.

SPORTS

Tennis courts, conveniently located about the campus, are available for use for a small fee. Class instruction and private lessons in tennis are offered by members of the Department of Physical Education; tennis, badminton, and golf tournaments and a swimming meet are arranged as part of the recreational program of the Summer Sessions. A nine-hole golf course is operated by the Department of Physical Education and Athletics; for information about conditions for its use and fees, address Mr. R. J. KANE, Schoellkopf Building, Cornell University. A gorge at one end of Beebe Lake, on the campus, forms a natural swimming pool, where a guard is on duty every day of the Sessions. Other excellent swimming pools and beaches are available in the three state parks which are located within 30 minutes driving distance from the University. For further information about outdoor recreational activities, see page 50.

EMERGENCY PROGRAMS

A few special courses designed to furnish to men about to enter national service instruction in subjects directly related to their future duties are offered, particularly in the first five-week Session. Special needs in the fields of Education and Home Economics have been met by the provision of unit courses in the six-week Session. To enable pre-medical students to qualify for admission to medical schools at the dates set by the accelerated programs of those schools, a carefully scheduled program of pre-medical courses is offered in the eleven-week Session. Many of the other demands of the emergency have been similarly met by offering in the Summer Sessions courses usually available in the regular sessions only. The more important of these emergency programs are listed below.

MILITARY TRAINING

The Department of Military Science and Tactics offers one term of the basic drill course to entering freshmen and to present sophomores. Undergraduates in other institutions who have had not more than one year of the basic course may enroll. This course may be entered either on June 1 or on June 29.

The department also offers to upperclassmen who have completed the two-year basic course three advanced courses in military training. These courses begin on June 1 and special permission is required for enrollment. Address all correspondence to the Department of Military Science and Tactics, Barton Hall, Cornell University.

PHYSICAL TRAINING

A course in physical training for men, designed to meet the requirements of the Navy V-1 program, but open to all male students, is offered in the eleven-week Session and in the fifteen-week term.

Address all correspondence with regard to this course to Mr. Robert J. Kane, Schoellkopf Building, Cornell University.

ARMY AND NAVY

PROGRAMS

Both the Army and the Navy have made provision for the enlistment of college students with the opportunity for continuance of their college courses. These programs specify the inclusion of certain subjects in the courses of study of those enlisted students who plan to qualify for commissions in their respective services. Information on the conditions of enlistment and the programs of study to be followed may be obtained at recruiting offices of the services.

Many of the required courses of these programs are offered in the Summer Sessions and enlisted students previously registered in the University must arrange to include these in their summer schedules. Freshmen enlisting in the Navy and entering the University on June 29 under the V-1 program may register for a full schedule of required or recommended courses. Correspondence with regard to any of the Army or Navy programs may be addressed to Dr. Cornelius Betten, Dean of the University Faculty, Cornell University.

PHYSICS PROGRAM

To meet the present urgent need for personnel trained in Physics, the College of Arts and Sciences has approved a two-year program of intensive training in physics for undergraduates. Students now in college and freshmen entering on June 29 with a good record in high school mathematics and physics may enter this program. For admission to this program and for further information about it, address Professor R. C. Gibbs, Rockefeller Hall, Cornell University.

PRE-MEDICAL COURSES

The schedule of these courses has been carefully worked out to enable students of all classes to accelerate their programs by taking courses in the eleven-week Session. Students in other institutions and entering freshmen who plan to attend the eleven-week Session to take pre-medical courses may secure advice on registration day or may correspond in advance with Professor V. S. Lawrence, Jr., Chairman of the Advisory Committee for Pre-Medical Students, White Hall, Cornell University.

SIX-WEEK SESSION

JUNE 29-AUGUST 8, 1942

Courses of instruction are listed by departments alphabetically arranged. In most courses, classes in this Session will meet five times a week, on each week day except Saturday. Class periods begin on the hour unless otherwise indicated, and are fifty minutes in length. Laboratory periods are of various lengths, as indicated by the descriptions. The meeting place of each course is given in the description of the course. Goldwin Smith Hall is indicated by the symbol GS; all other buildings are named.

AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

A 115. **Prices.** Undergraduate and graduate; credit three hours. Lectures, daily except Sat., 9. *Warren 125.* Laboratory, M, 1:40-4. *Warren 125.* Professor PEARSON.

A study of price movements and factors affecting them. Emphasis is placed upon agricultural prices and their relation to other prices. Attention is given to index numbers, seasonal variations, cycles, secular trends, the history of prices, physical volume of production, and the relation of gold to prices. Fee for materials, \$2.

A 141. **Marketing.** Undergraduate and graduate; credit three hours. Lectures, daily except Sat., 11. *Warren 125.* Laboratory and discussion, W, 1:40-4. *Warren 101.* Professor BOND.

A course dealing with problems of distribution of farm products. A study of demand, supply, costs, and other factors to consider in deciding when, where, in what form, and through what channels to sell; public regulations and controls. Fee for materials, \$2.

A 202. **Farm Management.** Undergraduate and graduate; credit three hours. Lectures, daily except Sat., 10. *Warren 101.* Laboratory, Th 1:40-6. *Warren 101.* Field trips will be taken to farms in nearby regions during most of the laboratory periods. Associate Professor WARREN.

A special course intended primarily for high school teachers, county agricultural agents and others who have had previous training in farm management and now wish a review of the field, together with instruction in selection and preparation of farm management and agricultural economic material for teaching purposes. Emphasis will be placed on farming as a business, factors affecting farm incomes, use of capital and credit, the organization and management of specific farm businesses, and the keeping and interpretation of farm records and accounts. Fee for materials, \$2.

AGRICULTURAL ENGINEERING

A 41. **General Shop Work for Rural High-School Teachers.** Undergraduate and graduate; credit three hours. T Th, 1:40-4:45, Sat., 8-12 and three recitation periods to be arranged. *Agricultural Engineering Laboratory.* Professor ROEHL.

Practical jobs to develop skill in woodworking, saw filing, tool grinding, handle fitting, harness repairing, rope work, cold metal working, farm blacksmithing, painting and glazing, furniture repairing, and refinishing, as suited to the needs of rural communities.

A course for teachers of agricultural and general shop work in rural high schools. Designed to develop skill in performance and teaching. Study will be made of shop objectives, shop planning, curriculum construction and organization, procedures in shop instruction and shop management. Laboratory fee, \$3.

A 43. **Field Machinery Repair.** Undergraduate; credit one, two, or three hours, for two, four, or six weeks. Lectures, W F, 11. *Dairy 119.* Laboratory, M W F, 1:40-5; and special problems. *Agricultural Engineering Laboratory.* Professor JENNINGS.

A study of the care, operation, adjustment and repair of plows, cultivators and other tillage machinery; planters, drills and other seeding machinery; mowers, binders, combines and other harvesting machinery.

This course is intended primarily to prepare men to teach the repairing of farm machinery as part of the shop work in Vocational Agriculture. Laboratory fee, \$1 per hour of credit.

A 49. **Welding.** Undergraduate; credit one hour. Prerequisite, permission to register. Practice by appointment. *Agricultural Engineering Laboratory.* Professor JENNINGS and Mr. CLOUGH.

Training in oxy-acetylene welding and in electric welding with both alternating and direct current machines. Laboratory fee, \$5.

A 101a. **Electricity and Its Application to the Home and Farm.** Undergraduate; credit one, two, or three hours, for two, four, or six weeks. Lectures, M W F, 8. *Dairy 119.* Laboratory, daily except Saturday, 9-11. *Agricultural Engineering Laboratory.* Assistant Professor WRIGHT.

First two weeks. A study of elementary electricity, dry cell and storage batteries, elementary wiring, lighting and power circuits, switching circuits, burglar alarms, wiring materials, wiring code rules. Laboratory fee, \$1.

Second two weeks. A study of house wiring, including the actual wiring of a small building, heating appliances, motor appliances, illumination and illuminating equipment including portable lamps, and power distribution systems. Laboratory fee, \$2.

Third two weeks. Electric motors and generators. A study of types of motors and generators commonly used on the farm and in the home together with their various applications. Opportunity will be given to build small motors and generators as a means of learning the principles of operation. Considerable time will be given to such matters as the selection, installation, and servicing of these machines. Laboratory fee, \$1.

A 251. **Special Problems in Agricultural Engineering.** Undergraduate and graduate; credit one or more hours. Prerequisite, adequate ability and training for the work proposed, and permission to register. Professors and assistant professors of the department.

Special work in any branch of agricultural engineering on problems under investigation by the department and of special interest to the student; provided, in the latter case, that adequate facilities can be obtained. Laboratory fee as arranged.

ASTRONOMY

S 1. **General Astronomy.** Undergraduate and graduate; credit two hours. Lectures and recitations: Section a, M W F, 10; Section b, M W F, 11. *Rockefeller 357.* Two laboratory periods to be arranged and one assigned observing period each week at the *Observatory.* Professor BOOTHROYD.

An introductory descriptive course illustrated by telescopic observations, models, and lantern slides and accompanied by laboratory exercises. The course is designed to give the student an understanding of the movements and organization of the solar system, the motions of its members and the relation of the system to the galactic system of stars, of which our sun is a member.

From this the student is led to appreciate the relation of our galactic system to the vast aggregation of external galaxies which observations made with great reflectors from the time of Sir William Herschel to the present, have revealed.

Students taking the course at the graduate level will be assigned additional laboratory exercises which will require considerable extra reading or observation or both.

S 183. **Navigation and Nautical Astronomy.** Undergraduate and graduate; credit three hours. Lectures and recitations, M W F, 9. *Rockefeller 357.* Laboratory, T and Th 2-4. A knowledge of Trigonometry is a prerequisite to this course. *Rockefeller 357* with six suitably arranged observation periods at the *Observatory.* These periods will be arranged during the first four weeks of the Session and will be used for sextant and compass observations on sun, moon, and stars. This observational data is used for the final class and laboratory exercises as a test of the student's ability to find his position on the earth's surface. Professor BOOTHROYD.

While the fundamental problems of finding the position of a ship at sea and of an airplane over land or sea are essentially the same, the chief emphasis in this course will be to the practical applications in aviation. It is the aim to make this course especially valuable to teachers who expect to teach courses in ground schools for the training of airplane pilots and navigating officers on ships at sea.

S 183 may be taken by Civil Engineering students to satisfy the required work in Course 182, the extra hour credit being counted as a Civil Engineering elective. Such students will make some of the required observations with a surveyor's transit instead of with the sextant and compass.

S 181. Special Problems. Undergraduate and graduate; credit and hours by arrangement. Professor BOOTHROYD.

Lectures and Demonstrations at the Observatory. A series of lectures will be offered on Monday, Wednesday and Friday evenings when clear. These will be illustrated by actual observations with the great telescope, as well as by other instruments at the Observatory and by diagrams, models, and astronomical photographs. These lectures and demonstrations carry no credit.

The first lecture will be on Wednesday and on Friday of the first week and the second, third, fourth, and fifth lectures will be given on Monday, Wednesday, and Friday of those weeks, while the sixth lecture will be given on Monday and Wednesday of the sixth week. The lectures begin at 9 p.m.

Admission to the lectures and demonstrations is by ticket, which may be obtained at the Summer Session office, 245 Goldwin Smith Hall. Summer Session students and faculty and members of their immediate families, may secure tickets without charge. The number of tickets issued for any one evening is limited to 35. Those who come to the Observatory without tickets will be admitted for a fee of 25 cents payable to the attendant at the door. When the weather is doubtful on a given evening, no lecture will be given if the number at the Observatory is less than 10 at 9:15 p.m.

BACTERIOLOGY

A 1. General Bacteriology. Undergraduate and graduate; credit two or four hours. Lectures, daily except Sat., 1:40. Laboratory, daily except Sat., 2:30-4:30. *Dairy* 119. Professor STARK.

An introductory course giving a general survey of the field of bacteriology, together with the fundamentals essential to further work in the subject. The morphology, physiology, and classification of bacteria; the culture of micro-organisms, simple and differential staining, and general bacteriological technique; the bacteriology of soil, air, water, sewage, milk, and foods; the principles of immunity and the microbiology of disease. Laboratory fee, \$10, for those seeking four credit hours.

A 220. Special Problems. Credit and hours by arrangement. Professors SHERMAN and STARK.

Special problems in bacteriology may be elected by qualified students with the permission of the instructors.

BIOLOGY

A 1a. General Biology. Undergraduate; credit three hours. Lectures, Laboratory work, and discussions, daily, 8, and M W F, 11-1. *Roberts* 392. Assistant Professor HOON.

This course offers the work of the first term of the introductory course in General Biology. Designed for the general student seeking a cultural background as well as for the prospective teacher. Plant and animal cells; the structures and activities of plants. Laboratory fee, \$2.50.

BOTANY

S 1a. General Botany—Anatomy and Physiology. Undergraduate; credit three hours. Equivalent to Botany 1, first term. Lectures, daily except Sat., 10. Laboratory and conferences, daily except Sat., 11-12:30. *Plant Science* 141, 242. Professor PETRY and Dr. CUTTER.

The structures and life processes of the higher plants are examined in detail, with considerable attention to information necessary for more advanced or practical work with plants. Students taking this course may attend the field trips offered in connection with Botany A 1b. Laboratory fee, \$3.50.

A 1b. General Botany—Morphology and Taxonomy. Undergraduate; credit three hours. Equivalent to Botany 1, second term. May be taken in conjunction with Botany S 1a, or independently. Lectures, daily except Sat., 2. Laboratory, daily except Sat., 3-4:30. Three half-day field trips on Saturdays to be arranged. *Plant Science* 141, 262. Mr. FORD.

Representatives of the principal groups of plants are studied with a view to acquaint-

ing the student with the plant kingdom as a whole. The principal families of ferns and flowering plants are examined and practice in identification is given.

The field work is intended to afford to teachers and others first-hand knowledge of the commoner plants of all the great groups. Facilities for collecting plant materials for teaching or other purposes will be provided. Laboratory fee, \$3.50.

A 31. **Plant Physiology.** Undergraduate and graduate; credit four hours. Prerequisite, general botany or biology and elementary chemistry. Lectures, daily except Sat., 9. *Plant Science* 141. Laboratory, T W Th F, 10-1. *Plant Science* 227. Professor O. F. CURTIS.

This course is designed to acquaint the student with the important life processes of plants. Topics such as water-relations, photosynthesis, translocation, digestion, respiration, mineral nutrition, and growth relations are studied in some detail and particular emphasis is placed, both in laboratory and in classroom, on discussion of the principles and their applications to growing plants. Laboratory fee, \$4; deposit, \$3.

A 117. **Taxonomy of Vascular Plants.** Undergraduate and graduate; credit four hours. Prerequisite, course 1 or its equivalent. Lectures, M T W Th, 2. Laboratory, M T W Th, 3-6, F, 2-5. One or two all-day field trips will be arranged. *Plant Science* 211. Assistant Professor CLAWSEN.

A study of the kinds of seed plants and ferns; their classification into genera, families, and orders; and field work on the local flora. Emphasis will be placed on wild plants, but the more common cultivated plants will have some attention. The course is planned to follow course A 1 and to furnish an introduction to the knowledge of field botany and to the classification of the higher plants, in preparation for special work in various departments and as an aid in teaching. Instruction will be given in herbarium methods. Laboratory fee, \$4; deposit, \$5.

A 123. **Plant Anatomy.** Undergraduate and graduate; credit four hours. Prerequisite, course A 1 or an equivalent and permission to register. Laboratory, M T Th F, 8-11:30. Hours for lectures to be arranged within these periods. *Plant Science* 228. Professor EAMES.

A course in the descriptive anatomy of vascular plants with emphasis on practice in interpretation and determination of material. Laboratory fee, \$5.

A 145. **Special Problems with Plants.** Credit two or more hours. Hours to be arranged. In registering for this course the name of the professor with whom the work is to be taken must be stated.

Students sufficiently prepared may arrange for the study of some problem or special topic. Such work may lie in the fields of general or taxonomic botany, anatomy, comparative morphology, mycology, cytology, plant physiology, economic botany, paleobotany, plant pathology, or genetics. A member of the staff must supervise the work.

CHEMISTRY

The courses announced below correspond entirely or in part with courses given during the regular session of the University. For regular students the requirements for admission to the various courses will be the same as during the year.

Teachers may be admitted to any course for which their general training or experience may be considered to prepare them. Efforts will be made to meet the individual needs of teachers by arranging and modifying the work, within reasonable limits, so as to fulfill the particular requirements in each case.

In some laboratory courses a deposit to cover the usual laboratory fee and also breakage and other variable items of expense is charged. At the end of the course the laboratory fee and breakage charge are determined and the unexpended balance is returned to the student. In other courses a laboratory fee of fixed amount is charged. The amount of the deposits and laboratory fees are indicated in the descriptions of courses.

All courses in Chemistry are given in the *Baker Laboratory of Chemistry*.

S 102a. **General Chemistry.** Undergraduate; credit three hours. For students who have not had high school chemistry. Lectures, M W F, 8. *Main Lecture Room*. Recitations, T Th S, 8. Laboratory, M W F, 11-1. Professor LAUBENGAYER and Dr. TAUBE.

First term of the usual introductory course; deals with the fundamental laws and

theories of chemistry and the properties of the more common elements and their compounds. Deposit, \$10.

S 104a. **General Chemistry.** Undergraduate; credit three hours. For students who have received entrance credit for high school chemistry. Rooms, hours and deposit the same as for S 102 above. Professor LAUBENGAYER and Dr. TAUBE.

First term of the introductory course for students offering chemistry for entrance.

S 205. **Introductory Qualitative Analysis.** Undergraduate; credit three hours. Prerequisite, a course in General Chemistry. Must be taken with course S 206. Lectures and recitations, daily except Sat., 8, and T Th, 9. Room 22. Dr. BAUER.

A study of the application of the theories of general chemistry to the systematic separation and detection of the common elements and acid radicals.

S 206. **Introductory Qualitative Analysis.** Undergraduate; credit three hours. Prerequisite, a course in General Chemistry. Must be taken with course S 205. Laboratory, M W F, 1:40-5 and T Th S, 10-1. Room 50. Dr. BAUER.

A study of the properties and reactions of the common elements and acid radicals; the qualitative analysis of a number of solutions and solid compounds. Deposit, \$25.

S 210. **Introductory Qualitative Analysis.** Shorter course. Undergraduate; credit three hours. Prerequisite, a course in General Chemistry. Lectures, M W F, 10. Room 107. Laboratory, M W F, 1:40-5, Sat., 9-1. Room 50. Dr. BAUER.

A study of the properties and reactions of the common elements and acid radicals and their detection in various solutions. Deposit, \$20.

S 230. **Advanced Quantitative Analysis.** Undergraduate and graduate; credit three hours. Laboratory, M F, 9-4, T, 10-1, Sat., 9-1. Room 252. Professor NICHOLS.

Recitations and laboratory practice. The calibration of weights and volumetric apparatus; the analysis of ferrous and non-ferrous alloys, silicates, and organic substances by various gravimetric, volumetric, and combustion methods. Deposit, \$20.

S 275. **Quantitative Microanalysis.** Graduate; credit three to six hours. Hours to be arranged. Room 358. Professor NICHOLS.

Laboratory practice in typical methods of both organic and inorganic quantitative microanalysis. Fee, \$20.

S 530. **Introductory Chemical Microscopy.** Undergraduate and graduate; credit three hours. Lectures and laboratory practice. Prerequisite, physical chemistry, or special permission. Lectures, M W F, 10. Room 377. Laboratory, M W F, 11-1, T Th, 10-1; additional periods may be arranged. Room 378. Professor MASON.

Microscopes and their accessories, as applied to problems in chemistry and technology. Micrometry and particle size determination; quantitative analytical methods; optical properties of crystals and other double refractive materials; physical-chemical studies; illumination, photomicrography, and ultramicroscopy; recognition of textile and paper fibers. Laboratory fee, \$5.

S 535. **Advanced Chemical Microscopy.** Undergraduate and graduate; credit two or three hours. Laboratory practice. Prerequisite or parallel, course S 530. Laboratory, M W F, 11-1, T Th, 10-1. Room 378. Professor MASON.

Practice in the examination and analysis of inorganic substances containing the more common elements, with special reference to rapid qualitative methods and to the analysis of minute amounts of material. Laboratory fee, \$5.

Students not desiring University credit, who wish to secure a working knowledge of Chemical Microscopy in the shortest possible time, may arrange by advance correspondence with the instructor to cover the parts of both of the above courses which best meet their needs.

S 195, S 295, S 395, S 495, S 595. **Research.** Undergraduate and graduate; credit one to six hours. Seniors and graduate students, by special permission, may elect research in the fields of Inorganic, Analytical, Organic, or Physical Chemistry, or Chemical Microscopy, under the direction of the respective members of the staff of instruction. Fee variable.

DRAWING AND PAINTING

The following courses correspond generally to those of the regular session of the University. Classes are small enough to permit individual instruction adapted to the

students' needs. The advanced student is given work and criticism according to his ability. All materials needed may be obtained in Ithaca.

In all courses one hour credit will be given for each five hours of laboratory work a week. Credit hours to be arranged upon registration.

A student may register repeatedly in successive Summer Sessions for credit in courses S 3, S 6, S 7, and S 8.

Courses will be given by Assistant Professor WASHBURN and an instructor.

S 1. Elementary Drawing. Undergraduate; credit two or four hours. Daily except Sat., 8-10. *Third floor, Franklin.*

This course is for beginners in drawing. There will be discussions of the elementary principles of representative drawing and exercises in pencil and charcoal.

S 3. Drawing and Painting from the Human Figure. Undergraduate; credit two to four hours. Daily except Sat., 10-12. *Third floor, Franklin.*

Study from living model in charcoal or in oil. Course S 1 or its equivalent is prerequisite to this course. A studio fee of \$10 is charged.

S 4. Elementary Color. Undergraduate; credit two to four hours. Daily except Sat., 10-12. *Third floor, Franklin.*

A course for beginners in color. Two hours of this course may be combined with two hours of S 1. Discussion of the principles of color as applied to representation and exercises in pastel, water color, and oil.

S 6. Outdoor Sketching in Color. Undergraduate; credit two to four hours. Daily except Sat., 2-4. *Third floor, Franklin.*

A knowledge of the elements of drawing and the elements of color is a prerequisite to this course. Instruction is given in oil from landscape.

The unusual variety and charm of the natural environment of Cornell give an abundance of subject-matter from which to work. There are woodland, open farming country, lakes and streams, broad panoramic views, and rugged gorges within easy walking distance of the campus.

S 7. Drawing and Painting. Undergraduate; credit two to four hours. Daily except Sat., 10-12. *Third floor, Franklin.*

Open to students with experience in drawing and painting. The work assigned will aim to satisfy the needs of the individual students registered.

S 8. Sculpture. Undergraduate; credit two to four hours. Daily except Sat., 10-12. *Third floor, Franklin.*

Studio work in modeling and carving. Problems will be set to meet the needs of the individual student.

ECONOMICS

S 1. Modern Economic Society. Undergraduate; credit four hours. Daily except Sat., 8 and 11. *GS 256. Mr. CHALMERS.*

A survey of the existing economic order, its more salient and basic characteristics, and its operation.

This course will be accepted as a prerequisite for advanced courses in place of courses 2a and 2b.

S 21a. Accounting. Undergraduate and graduate; credit three hours. Daily except Sat., 9, and T Th, 2-4. *GS 256. Professor ENGLISH.*

Theory of debit and credit; the journal and ledger; the development of books of original entry; preparation of income statements and balance sheets.

S 38. Development of Economic Controls. Undergraduate and graduate; credit two hours. Daily except Sat., 10. *GS 264. Dr. ADAMS.*

An analysis of the economic implications of modern industrialism and of governmental intervention in economic matters. Illustrative material will be drawn from American economic history since the Civil War.

S 80. Economics of War. Undergraduate and graduate; credit two hours. Daily except Sat., 8. *GS 264. Dr. ADAMS.*

A study of the impact of war upon the economic systems and the problem of mobilizing industrial resources.

EDUCATION AND RURAL EDUCATION

THE SCHOOL OF EDUCATION

TYPES OF PROFESSIONAL PROGRAMS LEADING TO STATE CERTIFICATION

For several types of professional workers, programs have been so planned that it is possible for the student to secure a Master's degree while completing requirements for a state certificate. Among the professional positions for which programs have been prepared are these:

- Teachers of academic subjects in the secondary school, of agriculture, home economics, industrial arts, industrial education, nature study, and of atypical children.
- Supervisors of agriculture, home economics, industrial education, and industrial arts.
- Guidance counselors
- Principals of elementary or secondary schools
- Principals of vocational or technical high schools
- Directors of vocational education
- Supervisors of elementary school grades
- Supervisors of attendance
- Supervising principals of small village central or consolidated schools
- Superintendents of large village or city school systems
- District superintendents, county superintendents, or similar leaders in rural education.

For information regarding any of these programs the student who is already matriculated in the Graduate School of Cornell University should consult the Chairman of his Special Committee. Others should write to the Director of the School of Education.

Opportunities for specialization in the various phases of Education are, of course, offered for those not concerned with certification.

SPECIAL CONFERENCES

The fifth annual Conference open to city supervisors of home economics of the United States and Canada and a selected group of teachers will be offered by the School of Education in cooperation with the College of Home Economics at Cornell, the New York State Education Department, and the United States Office of Education. The leader of the Conference will be from the staff of the Home Economics Education Service of the Federal Office. Conference activities will be focused upon common problems of city supervisors and teachers. Each supervisor is invited to select two classroom teachers who will join the teachers' group. No credit. Fee, \$5. Address applications to the School of Education, Stone Hall.

A Home Economics Curriculum Workshop is offered for two weeks, June 29 to July 11. This Workshop is offered only for those teachers of Home Economics in New York State who have either worked on individual curriculum projects or who have taken part with others in a group project. The program will include a study and evaluation of the material developed in these projects, their preparation for use by other teachers, and the planning of further development of those projects. It will be directed by Professor MILDRED L. SIPP, Head of the Department of Home Economics, Buffalo State Teachers College. Members will be expected to devote their full time to the activities of the Workshop.

This Workshop cannot be satisfactorily conducted unless there is an enrollment of at least fifteen members, and it will be cancelled if the registration is less than this. For this reason registration before June 15 is required. Address registration and correspondence to Professor FLORA THURSTON, School of Education, Cornell University. Workshop fee, \$12.

EDUCATIONAL PSYCHOLOGY AND MEASUREMENT

S 7. Mental Measurements. Undergraduate and graduate; credit three hours. With consent of the instructor, this course may be taken without observations for two hours credit. Daily except Sat., 9. Observation hours to be arranged. GS 142. Professor FREEMAN.

Concepts of intelligence; individual and group tests of intelligence; principles underlying their construction and interpretation; use of tests in schools and other fields. Lectures, readings, and observations of individual testing.

A 12. **Psychology of Exceptional Children.** Graduate; with the consent of the instructor, qualified undergraduates may be admitted; credit two hours. Daily except Sat., 11. *GS* 242. Professor FREEMAN.

Designed to give a scientific understanding of children who deviate from the usual: the gifted, the feeble-minded, the delinquent, those having special abilities or disabilities, those having personality defects, and those having sensory and physical handicaps. Lectures, reading, and case studies. Students who have not had or are not now taking a course in mental measurements may be admitted only with approval of the instructor.

A 116. **Child Psychology.** Undergraduate and graduate; credit two hours. Daily except Sat., 10. *Plant Science* 107. Professor KRUSE.

Students who have not had a course in educational psychology admitted only on approval of instructor.

A 212. **Psychology of Learning.** Graduate; credit two hours. M W F, 7:30—8:50 a.m. *Stone* 309. Professor KRUSE. For students who have had at least an elementary course in psychology and who want to extend their study of the learning process.

A 215. **Psychology of Adolescence.** Undergraduate and graduate; credit two hours. Daily except Sat., 10. *Warren* 125. Professor WINSOR.

A study of the behavior of children during the adolescent stage of development.

A 251. **Educational Measurement.** Graduate; credit two hours. Daily except Sat., 8. *Warren* 140. Assistant Professor BAYNE.

The use and interpretation of tests by teachers and school officers as aids in the improvement of instruction.

EDUCATIONAL METHOD

S 4. **Method in the Changing Secondary School.** Graduate; credit two hours. Daily except Sat., 11. *GS* 134. Associate Professor HULSE.

A critical study of the theory of method through the analysis of teaching objectives, types of subject-matter, and basic teaching procedures. Current plans and techniques of teaching will receive considerable attention in order to determine their characteristic values. Familiarity with the secondary-school pupil through experience is assumed.

S 33. **The Teaching of English in Secondary Schools.** Undergraduate and graduate; credit two hours. Daily except Sat., 8. *GS* 134. Mr. GROMMON.

Purposes and responsibilities of the teacher of English during time of war. Construction of units and lesson plans. Objectives and activities in teaching oral and written composition; the problem of secondary-school grammar; how to teach it. Objectives and activities in teaching literature; differentiated techniques for appreciation and information; individual reading problems.

A 122a. **Observation of Child Activity Education.** No credit. Daily except Sat., 9-11:30 and group conferences each Thursday from 2-3:30. *Comstock* 245. Professor MOORE, Dr. RUEGSEGER, and Miss KNAPP.

Demonstration work with children during the summer session period. So far as facilities permit, summer session students will be allowed to observe these children at work. The group conferences will be held for the purpose of discussing and interpreting the teaching observed.

A 127. **Observational Aids to Learning.** Undergraduate and graduate; credit two hours for lectures or three hours for lectures and laboratory. Lectures, daily except Sat., 10. *Fernow* 14. Laboratory, T, 1:40-4. *Fernow* 14. Assistant Professor JOHNSON.

A course dealing with the evaluation of materials available as: films, slides, charts, models, recordings, broadcasts, and other sensory aids to learning, together with a study of methods and techniques for using such aids effectively. Special emphasis will be given to subjects commonly taught in elementary and secondary schools, but students will be assisted in applying the methods and techniques to special fields. The laboratory consists of practical exercises dealing with the preparation of: charts, models, lantern slides, simple cameras, and similar projects, as well as the use of visual and auditory materials which are available commercially.

A 128. **The Teaching of Natural History in the Field.** Graduate; credit three hours. Lecture, M, 12. *Fernow* 8. Field work, F, 1:40 p.m. to Sat., 8 p.m. Professors PALMER, HAMILTON, ALLEN, PETRY, PALM, and GUISE, Miss GORDON, and Mr. TRAINER.

To acquaint experienced science teachers with methods of field studies suitable for public school teaching and work in teacher-training institutions. Trips combine ecological sites with observation of methods used by botanists, zoologists, general ecologists, entomologists, foresters, and astronomers. Practice is given in field teaching under supervision. Students live in the field from Friday noon to Saturday night. Advance registration expected. Enrollment limited to twenty. Membership fixed tentatively June 1. Applicants should file with Professor E. L. PALMER detailed records of teaching experience and training in science. Students furnish bedding but pup tents or sleeping bags are available on a rental basis. Meals and transportation supplied at cost, which for six weeks will be \$20. This is to be paid in advance. Open only to those taking work for credit. Provision can be made for all women students to live in the same house.

A 134a. **Special Education for Out-of-School Youth and Adults.** Undergraduate and graduate; credit two hours. Daily except Sat., 9. *Warren* 201. Associate Professor HOSKINS.

Designed for teachers of vocational agriculture and other leaders of older youth and adults in rural areas. The consideration of objectives, development and trends of education for out-of-school groups.

E 134c. **Adult Homemaking Education.** (See Home Economics; Educational Leadership in Homemaking and Family Living: E 340. Program Planning and Methods; E 340A. Educational Leadership in Foods and Nutrition; E 340B. Educational Leadership in Consumer Problems and Home Management). Graduate; credit two, three, or four hours. Registration by permission of the instructor. Discussion, M W F 11-1; field work and group conferences to be arranged. *Martha Van Rensselaer* 121. Assistant Professor HENDERSON and others.

For homemaking teachers, extension workers, and others who may lead in Civilian Defense or other out-of-school educational programs in homemaking.

Estimated cost of trips, \$5-\$7. Fee, \$4-\$6.

E 134d. **Adult Home-Making Education.** Undergraduate and graduate; credit two hours. May not be counted for residence credit in the Graduate School. Unit course, two weeks in length, June 29 to July 11. For description, see E 345 in the Department of Educational Leadership in Homemaking, under Home Economics. First meeting of class at 4 on Monday, June 29. *Martha Van Rensselaer Hall, Room* 301. Assistant Professor HENDERSON and others.

This course is offered provisionally: it will be cancelled if the registration is less than fifteen. Fees for the course; tuition, \$24, and expenses of trips, estimated at \$2. Advance correspondence or registration is required: the last date is June 15. Address correspondence to Professor GRACE M. HENDERSON, College of Home Economics, Cornell University.

S 143. **The Organization and Teaching of Technical Subjects.** Undergraduate and graduate.

a, b. Curriculum construction and development of instructional materials for national defense training programs in industrial and technical high schools. Credit six hours. Daily except Sat., 9-4. *Sibley Dome Basement.* Professor EMERSON.

Designed primarily for graduate students in industrial and technical education who have had some experience in the development of instructional materials. Deals with analysis of national defense industries for occupational training content; the organization of courses of study of pre-employment and trade extension type; and the preparation of instruction sheets and other aids to instruction. Students will need to consult or correspond with instructor before registering.

c. Special methods applicable to teaching technical and related subjects in drawing room, shop, laboratory, and classroom. Credit two hours. Daily except Sat., 9. *Plant Science* 143. Mr. GRAY.

A 145. **The Professional and Technical Preparation of Teachers of Agriculture.** Undergraduate and graduate; credit two hours. Daily except Sat., 10. *East Roberts* 223. Professor STEWART.

Designed for teachers, prospective teachers, and supervising officers who are concerned with agriculture in the public schools and who desire a basic understanding of teacher problems; professional and technical content, curriculum organization and teaching procedures, and the adjustments of instruction to the persons to be reached.

Special attention will be given to the demands of the war situation upon teachers and schools.

A 205. **The Teaching of Conservation.** Undergraduate and graduate; credit two hours. Daily except Sat., 9. *Fernow* 8. Professor PALMER.

Consideration of the principles, materials, and methods of conservation education useful to teachers and others engaged in teaching of the wise use of the resources of the nation, particularly in the present emergency. Sections will deal with safety education, wild life conservation, soil conservation, and similar types, with special trips supplementing classroom activities.

A 232. **Advanced Problems of Teaching in Vocational Agriculture.** Undergraduate and graduate; credit three hours for three special units of two weeks each. Units may be taken separately for one hour of credit each. For residence credit in the Graduate School, all units must be taken and must be preceded by satisfactory preparation in the teaching of agriculture. Daily except Sat., 11; T, 1:40-4:45; other hours by appointment. *Plant Science* 143. Associate Professor HOSKINS.

Unit 1. June 29-July 11. **Program Planning and Evaluation.** A consideration and evaluation of successful programs for vocational education in agriculture in relation to teaching situations and the aims and objectives for program planning.

Unit 2. July 13-July 25. **Program Making.** Direction in program making and reorganization to meet the permanent and emergency needs of rural communities.

Unit 3. July 27-August 8. **Surveys and Their Use.** A study and classification of available survey materials as to their use; the development of survey forms for special purposes; the collecting, tabulating, and evaluating of survey data in relation to establishing successful programs for vocational education in agriculture.

A 236. **Creative Procedures in the Teaching of Home Economics in the Secondary School.** Undergraduate and graduate; credit two hours. Daily except Sat., 11. *Warren* 340. Miss HUTCHINS.

Designed to develop creative ideals and procedures for building, teaching, and appraising home economics programs for school and community.

S 243a. **Supervision of Industrial and Technical Education.** Graduate; credit two hours. Daily except Sat., 10. *Rockefeller* 110. Mr. GRAY.

Principles and practices in the improvement of instruction in all phases of industrial and technical high school courses. This course is correlated with S 143c.

A 243b. **Seminar in Vocational, Industrial, and Technical Education.** Graduate; credit two hours. Daily except Sat., 11. *Plant Science* 141. Professor EMERSON.

A study of current problems in National Defense Training.

A 248. **Preparation of Teachers of Home Economics for Secondary Schools.** Graduate; credit two hours. Daily except Sat., 9. *Warren* 101. Miss HUTCHINS.

Planned for cooperating teachers participating in teacher education programs and for experienced teachers who desire to prepare for positions in the field of teacher education. The course deals with the nature, purpose, organization, and administration of student teaching; the functions of the cooperating teacher; induction of student teachers into the total school program and into community activities; critical analysis and appraisal of directed observations, participation, and teaching; cooperating teacher and student teacher conferences.

ADMINISTRATION, SUPERVISION, CURRICULUM

S 24. **The Principalship.** Undergraduate and graduate; credit two hours. Daily except Sat., 11. *GS* 142. Dr. RUEGSEGER.

A consideration of the problems of elementary and high school administration. Intended primarily for persons interested in elementary or secondary principal's certificates. Persons interested in certification for the elementary principalship register for S 24a. Persons interested in certification for the secondary principalship register for S 24b.

A 242b. **Seminar in Industrial Arts Education: Curriculum.** Graduate; credit two hours. Daily except Sat., 10. *Warren 340.* Mr. AHR. This course will not be offered unless there is an advance registration of at least 10 persons by June 15, 1942.

A study of industrial arts curricula and their adaptations to present-day needs.

A 242d. **Seminar in Industrial Arts Education: Supervision.** Graduate; credit two hours. Daily except Sat., 11. *Warren 201.* Mr. AHR. This course will not be offered unless there is an advance registration of at least ten persons by June 15, 1942.

A study of supervision of industrial arts programs in the public schools.

A 249. **Seminar in Home Economics Education.** Graduate; credit two hours. M T W Th, 11-12:30. *Warren 140.* Professor THURSTON.

A study of problems of home economics education with special emphasis upon the development of curricula and other educational programs. Designed to meet the needs of graduate students who have had experience as home economics educators in schools, colleges, extension service, business, etc. Arrangements will be made for students to work on their individual problems.

A 250. **Seminar in Agricultural Education.** Graduate; credit two hours. Daily except Sat., 8. *East Roberts 223.* Professor STEWART.

Open to teachers and those responsible for administration, supervision and teacher training, and who have had previous graduate studies in agricultural education. The theme of the seminar is concerned with the emergency problems facing agricultural education in the public schools.

A 261. **The Administration of Rural Schools.** Graduate; credit two hours. Daily except Sat., 8. *Warren 201.* Professor BUTTERWORTH.

A general course in school administration dealing especially with the problems of village and central schools. Individual attention will be given to those who are working in larger schools.

A 262e. **The Administration of Attendance.** Undergraduate and graduate; credit two hours. Daily except Sat., 8-10 and 2-3. A two-week unit course, July 13-24; repeated in the period July 27-August 8. *Plant Science 107.* Mr. MOSHER.

Admission only upon application to the Director of the School of Education before June 29. Neither of these units will be offered unless there is an advance registration of at least 15 persons by June 29.

Changes in educational method and procedure, the relationship of personnel workers, and home security constitute the major areas of discussion.

A 262f. **Practicum: The School and the Community.** Credit two hours. A two-week unit course, July 13-24. First meeting, July 13, 9 a.m. *Plant Science 233.* Dr. RUEGSEGGER, Professors BUTTERWORTH, MOORE, and STEWART. Consultants from the fields of Health, Social Psychology, Sociology, et al. Admission only upon application to the Director of the School of Education before July 1.

This practicum is intended primarily for district superintendents, principals of central rural and union free schools. A limited number of other school administrators and special workers may be admitted. A maximum of forty registrations will be accepted.

Consideration will be centered upon the problems of the school in serving more completely the various needs of the community as relate to children, youth, and adults. Problems arising from the war situation will receive special attention. In addition to lectures, discussions, and preparation, each member of the Practicum will be expected to make a special study of some one specific problem with which he is concerned in his community. He will work under the general guidance of one or more members of the Practicum staff.

A 264. **Seminar in Rural School Administration.** Graduate; credit two hours. Daily except Sat., 10. *Roberts 392.* Professor BUTTERWORTH.

Topic: the nation's educational program. An analysis of forces that are creating new educational problems and an appraisal of practices that have been used and of proposals that have been made for meeting them.

A 266. **The Supervision of the Elementary School.** Graduate; credit two hours. Daily except Sat., 10. *Seminar Room, Fernow.* Professor MOORE.

Designed for supervisors, elementary school principals, and superintendents. A consideration of important research studies which have a direct bearing upon the teaching and supervisory problems of the elementary school.

A 276. **Principles of Curriculum Building.** Credit two hours. Daily except Sat., 9. *East Roberts 223.* Professor FERRISS.

A consideration of major problems, principles, and techniques in determining objectives and curriculum content and organization in elementary and secondary schools in the light of modern educational theory and practice. Selected examples of recent curriculum building will be critically examined.

B 276c. **Workshop.** Graduate; credit four to six hours. First meeting, June 30 at 1:40. *Warren 25.* T Th, 1:40-4:15, general meetings. Other hours to be arranged. Prerequisite, A 276, its equivalent, parallel study, or satisfactory experience.

General Coordinator and Mathematics, Associate Professor HULSE.

Elementary Education, Professor MOORE.

Home Economics, Professor THURSTON.

Agriculture, Associate Professor HOSKINS.

Social Studies, Mr. WALINSKY.

English, Mr. GROMMON.

Science, Assistant Professor JOHNSON.

Community Resources, Associate Professor POLSON.

The Workshop will provide an opportunity for experienced teachers and supervisors to work on curriculum problems and related projects under the direct supervision of members of the staff. The intensive study of a problem significant to the student and participation in group conferences with workers of similar interests furnish an unusual experience for the supervisor and teacher. Through the general meetings attended by the staff and all members of the Workshop, an opportunity will be provided for the presentation and discussion of many issues of general significance. Particular attention will be given this summer to the techniques of study and use of community resources. A special section is provided in the Workshop for persons who desire to concentrate on the use of local resources in instruction. Field experience will be available for the study of community trends, social problems, patterns of leadership, influence of defense programs, and techniques for collecting and evaluating social data for educational purposes.

Since some preliminary planning is very desirable, interested teachers and supervisors should make application as early as possible to the coordinator or the appropriate staff member listed above, stating the field and the grade level in which they are interested, and the nature of the problem upon which they wish to work. To be assured of a place in the Workshop, applications should be made not later than June 15.

GUIDANCE

A 28. **Introduction to Educational and Vocational Guidance.** Undergraduate and graduate; credit two hours. Daily except Sat., 11. *Warren 225.* Dr. BAILEY.

This is an information course. It is designed to familiarize students with: (1) the history, principles, purpose, and place of guidance in educational systems; (2) methods of collecting, classifying, indexing, and filing information on educational, occupational, and community resources available for a guidance program; (3) placement procedures and employment supervision.

A 30. **Studies in Educational and Occupational Opportunities.** Undergraduate and graduate; credit two hours. Daily except Sat., 8. *Plant Science 141.* Dr. REED.

Research procedures and laboratory work in making educational and occupational studies. Preparation for field work and plant visitation.

A 34. **Counseling Methods.** Undergraduate and graduate; credit two hours. Daily except Sat., 9. *Warren 140.* Dr. BAILEY and Dr. REED.

Techniques for collecting, integrating, and utilizing information about the individual.

A 36. **Methods of Utilizing Occupational Information.** Undergraduate and graduate; credit two hours. Daily except Sat., 2. *Warren 140.* Dr. BAILEY.

The advantages and disadvantages of various methods of disseminating information such as credit courses, group conferences, radio, and pictures.

A 217. **Use and Interpretation of Tests in Guidance.** Graduate; credit two hours. Daily except Sat., 8. *Warren 340.* Professor WINSOR.

This course deals with the development, use, interpretation, and significance of psychological measuring devices as a basis for analyzing the capacities, interests, and abilities of individuals seeking vocational guidance. A course in measurement is prerequisite.

PRINCIPLES AND HISTORY OF EDUCATION

S 294. **Philosophy of Education.** Graduate; credit two hours. Daily except Sat., 11. *East Roberts* 223. Professor FERRISS.

A consideration of some of the major concepts of education as these are concerned with its meaning, processes, and purposes and as related to the human organism and the important groups making up modern society. Emphasis will be given to the problem of desirable features and aims of education in a democratic form of society with its interpretation of human values.

RESEARCH

B 300. **Research.** Graduate; credit as arranged. Members of the staff of the School of Education.

Students working on theses or other research projects may register for this course. The staff members concerned must be consulted before registration.

ENGLISH

S 32. **Elizabethan Literature.** Graduate; credit two hours. Daily except Sat., 12. GS 160. Associate Professor NUNGEZER.

Studies in Elizabethan backgrounds: Erasmus, More, Elyot, Castiglione, Ascham, Wyatt, and Surrey.

S 36a. **Poetry of the Victorian Age.** Undergraduate and graduate; credit two hours. Daily except Sat., 10. GS 160. Associate Professor FRENCH.

A study of certain poets from 1830 to 1910, with special attention to Robert Browning. Text: *Victorian and Later English Poets*, edited by Stephens, Beck, and Snow.

S 39. **American Literature to the Civil War.** Undergraduate and graduate; credit two hours. Daily except Sat., 8. GS 156. Professor THOMPSON.

A study of literary and democratic ideals reflected in the writings of Irving, Bryant, Cooper, Poe, Emerson, Thoreau, Hawthorne, Melville, Whittier, Longfellow, Holmes, and Lowell. Text: Quinn, Baugh, and Howe, *The Literature of America*, Vol. I.

S 54. **Modern American Poetry.** Undergraduate and graduate; credit two hours. Daily except Sat., 9. GS 156. Professor WILLIAMSON.

An introductory course centering in a study of T. S. Eliot. Text: T. S. Eliot, *Collected Poems*.

S 58. **American Folk-Literature.** Undergraduate and graduate; credit two hours. Daily except Sat., 10. GS, *Museum of Casts*. Professor THOMPSON.

Backgrounds of literary and democratic ideals revealed in traditional tales, ballads, proverbs, and folk-beliefs of whites, Negroes, and Indians. Emphasis upon ballads, which will be sung, and upon methods of collecting and classifying folklore. Texts: Thompson, *Body, Boots and Britches*, and Sandburg, *The American Songbag*. No technical knowledge of music is required.

S 60. **Chaucer.** Undergraduate and graduate; credit two hours. Daily except Sat., 12. GS 162. Associate Professor FRENCH.

A course for those who wish to know something about the Canterbury Tales. Previous training in linguistics will not be expected. Text: F. N. Robinson, *Chaucer's Complete Works*.

S 61. **Shakespeare.** Undergraduate and graduate; credit two hours. Daily except Sat., 11. GS 156. Associate Professor NUNGEZER.

A study of the dramatic art of Shakespeare as illustrated by *Hamlet*, *Macbeth*, *King Lear*, and *Antony and Cleopatra*; with supplementary readings.

S 63. **Milton.** Undergraduate and graduate; credit two hours. Daily except Sat., 10. GS 156. Professor WILLIAMSON.

A study of Milton's poetry, supplemented by readings in his prose. Text: *The Student's Milton*, edited by F. A. Patterson.

S 82. **The English Language.** Undergraduate and graduate; credit two hours. Daily except Sat., 11. GS 164. Professor MONROE.

A study of some significant features in the growth and development of the mother tongue; language and grammar in general; some misconceptions about the life of language; the relationships of English; idiom; the English vocabulary; inflections; native resources and foreign influences; the bearing of historical grammar on present forms and usages, spoken and written.

Baugh's *History of the English Language* is used as a basis for recitations, lectures, and collateral reading. The course does not require previous knowledge of Old or Middle English. Extra work is required for credit in the Graduate School.

S 401. **Special Topics for Investigation.** For graduate students who wish to supplement courses described above or who are prepared to pursue independently of formal courses advanced study under the direction of one or more members of the staff. Credit varies with the nature and the amount of the work done. Such students may write to Professor MONROE or consult him at the opening of the Session.

ENTOMOLOGY

A 41. **Elementary Economic Entomology.** Undergraduate and graduate; credit three or four hours. Lectures, daily except Sat., 8. *Comstock* 145. Practical exercises, T Th, 1:40-4 and Sat., 8-10:30, and one period by appointment if taken for four hours credit. *Comstock* 100. Professor READIO.

Includes lectures, conferences, and discussions on the life histories and habits of injurious insects, together with methods of control. The practical exercises include a study of the more important insecticides and of as many of the common pests as time permits. There will be a number of field trips. Laboratory fee, \$2.

A 51. **Human Parasitology and Medical Entomology.** Undergraduate and graduate; credit three hours. Prerequisite, Biology 1 or Zoology 1 or an equivalent. Lectures daily except Sat., 9. *Comstock* 200. Practical exercises, M W F, 2-5. *Comstock* 200. Professor MATHESON.

This course will include lectures and demonstrations on the Protozoan and Helminthic parasites of man; on those insects which attack man, are the causative agents of human diseases, or act as transmitting agents of human and animal diseases. The laboratory work will consist of a study of human parasites and the methods of diagnosis of infection; the study and identification of insects that affect man or act as causative agents of disease or as transmitters of disease producing organisms of man and animals. Texts required will be announced at the beginning of the course. Laboratory fee, \$4.

FLORICULTURE AND ORNAMENTAL HORTICULTURE

A 1. **General Floriculture and Ornamental Horticulture.** Undergraduate; credit two hours. Lectures, M W F, 8. *Plant Science* 37. Laboratories, M W, 1:40-4:30. *Plant Science* 15. Assistant Professor ALLEN.

A practical elementary course on the culture and use of ornamental plants designed to meet the needs of elementary school teachers and amateur gardeners. Specific subjects considered are propagation, garden planning and maintenance, flower arrangement, flower judging, house plant culture, care of trees and shrubs, lawns, and hedges, and soil management. Some attention is also given to the identification and use of common ornamental plants such as roses, annuals, perennials, rock garden plants, trees, and shrubs. Laboratory fee, \$3.

A 12. **Herbaceous Plant Materials.** Undergraduate and graduate; credit two hours. T Th, 8-12:30. *Plant Science* 15 and *Gardens*. Assistant Professor ALLEN.

A study of the ornamental herbaceous plants used in landscape and garden plantings. Emphasis is placed on the identification, uses and culture of annuals and summer flowering perennials. Problems in garden maintenance are considered. Members of the class will participate in an excursion on August 1 and 2 to visit private estates and public parks in Rochester. Laboratory fee, \$4; transportation fee, \$3.

A 13. **Woody Plant Materials for Landscape Planting.** Undergraduate and graduate; credit two or three hours, by arrangement. M W, 8-12, 1:40-4:30. *Plant Science* 29 and *Campus*. Professor CURTIS.

A study of the characteristics and requirements of trees, shrubs, and vines for landscape planting. The laboratories and field trips enable the student to recognize common woody plants. The lectures discuss plant materials, in order that the student may learn to see plants not only as growing things but as possible units in designs with which he may be able to improve his surroundings. All members of the class will participate in an excursion on July 27 and 28 to visit private estates and public parks in Rochester. Laboratory fee, \$3. Transportation fee, \$4.

A 118. **Landscape Construction.** Undergraduate and graduate; credit two or four hours by arrangement. Prerequisite, permission to register. Lectures, W, 7-9:30

p.m. *Plant Science* 37. Laboratories, T Th, 1:40-6; F 8-12, 1-6; S, 8-1. *Practice fields*. Associate Professor PORTER.

A course covering the construction problems of the service departments of nursery landscape firms, landscape contractors, greenkeepers, and park superintendents. Studies, estimates, and the practice of grading, earthwork, walls, terraces, steps, pools and the like. Laboratory fee, \$8.

A 119. **Propagation and Management of Ornamental Plants.** Undergraduate and graduate; credit three hours. Prerequisite adequate training in Botany and permission to register. M T W Th, 8; M, 10-12:30 and 1:40-5. W, 1:40-5. *Plant Science* 22 and *Nurseries*. Assistant Professor PRIDHAM.

A study of the principles and practices employed in the propagation, transplanting, and maintenance of woody plants including fertilizing, pruning, and a discussion of special plants for special places. Laboratory fee, \$3. Transportation fee, \$4.

A 162. **Special Problems.** Undergraduate and graduate; credit and hours by arrangement. Members of the staff.

Special problems in plant materials, nursery, and landscape work may be elected by qualified students with the permission of the instructors. Laboratory fee dependent upon the nature of the problem.

Courses A 118 and A 119 are offered to practicing nurserymen, park and estate superintendents, landscape engineers and architects, and to advanced students in horticulture and landscape gardening. These courses taken together constitute a full summer program. Either course may be taken separately or may be combined with other courses offered in the Summer Session.

FRENCH

S 9. **Advanced Written and Spoken French.** Undergraduate and graduate; credit two hours. Daily except Sat., 12. *GS* 283. Associate Professor THÉNAUD.

Prerequisite, French 5 or its equivalent. Designed especially for teachers and prospective teachers. Translation into French; discussion of important points of syntax; theme writing, oral exercise. Especially recommended to candidates for the examination for the approval of Oral Credit in New York State. The course is conducted in French.

S 28. **Littérature contemporaine.** Undergraduate and graduate; credit two hours. Daily except Sat., 10. *GS* 277. Associate Professor THÉNAUD.

Prerequisite, French 4 and 5 or their equivalent. Lectures, outside reading, and reports. The course is conducted in French.

S 47. **French Seminary.** Graduate; credit two hours. Daily except Sat., 11. *French Seminary Room, Library*. Professor BERGIN.

Discussion of a special topic in the field of French literature. The course is designed to give an introduction to methods and materials of literary research.

GENETICS

A 101. **General Genetics.** Undergraduate and graduate; credit four hours. Prerequisite, two courses of a biological nature, and permission to register. Courses in cytology and in taxonomic botany or zoology will be found helpful. Lectures, daily except Sat., 8. Laboratory, M W F, 1:40-4. Conferences to be arranged. *Plant Science* 146. Dr. MURRAY.

An introductory course designed to acquaint the student with the fundamental principles of heredity and variation. Discussions of simpler cases of inheritance, gene interaction, inheritance of sex, sex and gene linkage, quantitative inheritance, the genetics of inbreeding and outbreeding, plasmatic inheritance, and mutation, with suggestions as to the relation of genetical principles to eugenics. Laboratory studies of hybrid material in plants and breeding experiments with the vinegar fly, *Drosophila*. Laboratory fee, \$3.

GEOLOGY

LECTURE COURSES IN GEOLOGY

S 1-S 5. **General Geology and Physiography.** Introduction to Earth Science. Given as two correlated courses, as indicated below, either of which may be taken sepa-

rately for 2 hours credit, but which taken together for 4 hours credit, constitute the lecture and textbook part of Geology A as given in the regular session. S 1 and S 5 together with S 9 and S 10, 6 hours credit, are counted the equivalent of Geology A, the six hour basic course in elementary general geology and physiography. Courses S 5 and S 9 and S 10 are counted the equivalent of Geology 100.

S 1. Dynamic Geology and Physiography. Undergraduate; credit two hours. Daily except Sat., 9. *Geological Lecture Room, McGraw* (first floor, south end). Professor VON ENGELN.

The content of this course includes the topics: history of geological ideas; processes of weathering and their results on landforms; action of streams and valley forms; the morphology of deserts; oceanography; marine erosion; mountain topography; phenomena of glaciers and glaciation; nature of continents and ocean basins; geological climates; orogenies.

The lectures are illustrated by lantern slides, and are correlated with study of a textbook. Students registering in Course S 1 are advised also to take Course S 5 and, for a general course in elementary geology, should further take Courses S 9 and S 10.

S 5. Petrologic, Structural, and Historic Geology. Undergraduate; credit two hours. Daily except Sat., 11. *Geological Lecture Room, McGraw* (first floor, south end). Assistant Professor BURFOOT.

Lectures and correlated textbook readings upon the following topics: origin of the earth, materials of the earth's crust and their arrangement, diastrophism, earthquakes, vulcanism, structural phenomena, metamorphism, origin of mountains, ground water, caves, age of the earth and geological time periods, the fossil record, origin of man.

The lectures are illustrated with lantern slides and specimens. Students registering in this course are urged to take the laboratory course S 9 and the correlated lecture course S 1. These three courses together with S 10 constitute the equivalent of Course A in the regular session.

LABORATORY AND EXCURSION COURSES IN GEOLOGY AND PHYSIOGRAPHY

S 9. Geology Laboratory Course. Undergraduate; credit one hour. W F, 1:40-4. *General Geological Laboratory, McGraw* (first floor, middle entrance). Assistant Professor BURFOOT.

This course is designed to supplement courses S 1 and S 5. A study will be made of the more common structural phenomena; of the interpretation and uses of topographic and geological maps; of characteristic life forms developed in different geological periods; and of the more common rocks and minerals. Laboratory fee, \$1.

S 10. Geography and Geology, Field Course. Undergraduate and graduate; credit one hour. This course should be elected by all those registering in course S 1 or S 5. With courses S 1, S 5, and S 9 a training in elementary geology, and physiography is made available to the student by the inclusion of S 10. Mimeographed outlines of the excursions are to be secured from one of the bookstores by each student desiring credit. See also a pamphlet, obtainable in Ithaca, on *The Geography and Geology of the Cornell Region*. Professor VON ENGELN and Assistant Professor BURFOOT.

Students desiring credit or certificates of attendance must register in S 10 and will be given preference in accommodations.

Those desiring University credit must take field notes and hand in written reports. Excursions 1, 2, 3, 4, 5 are required of all students in the course, and in addition for one hour's credit they must take any two of the following four all-day excursions: 6, Watkins Glen; 7, Northern Pennsylvania; 8, Lake Ontario; and 9, Connecticut Hill, Cayuta Lake and Outlet Gorge, and the Chemung Cut-Off.

Meeting place and time announced in mimeographed outlines or by bulletin. Meet for first excursion, Monday, July 6, at *McGraw Hall*, 2 p.m. Excursions 1-5, Monday afternoons; 6, 7, 8, 9, all day. On those excursions to which a cost is attached for bus or railway fares, persons wishing to go must register at the department and secure tickets in advance of the date of the trip. For bus fare on the first excursion, bring 10 cents. The total cost of the trips will be from \$7 to \$10, according to the choices made. Announcements regarding field trips are posted on the middle door of *McGraw Hall* and all arrangements for reservations and tickets are made in the Geology Department Office, middle entrance, *McGraw Hall*. The trips are open to others besides the mem-

bers of the excursion class as far as accommodations are available. Stops are made at points of interest, explanations given, questions asked, and discussion invited.

OUTLINE OF EXCURSIONS: COURSE S 10

Monday Afternoons

1. **Cascadilla Creek.** Meet at the south entrance to *McGraw Hall* at 2 p.m. Bring registration slips and excursion outline. To study the origin and nature of sedimentary rocks, also processes of erosion, transportation, deposition, and cementation. A study in detail of one of the large gorges and its special features. Opportunity for the collection and identification of a variety of rock kinds is afforded on this trip. Bring ten cents for return bus fare. July 6.

2. **Snyder Hill.** By bus. No tickets; bring 25 cents in change for bus fare. To become acquainted with the lay of the land about Cornell, to learn the place names and nature of the broader physiographic features, studying the maturely dissected plateau and processes of weathering. The top of the hill is a vantage point from which a good view of the lake and the land for miles to the north, east, and west may be had. July 13.

3. **Portland Point.** By bus. Tickets. To study rock structure; intrusion of igneous rocks into sedimentary formations; rock-folding and small-scale faulting and associated phenomena; vein-formation; fossil content of strata; economic utilization for cement. July 20.

4. **Enfield Gorge and Falls.** By bus. Tickets. To study the relations of preglacial and hanging valleys and the postglacial and interglacial gorges, their origin and features. Joint-plane guidance of stream courses. Ride to the head of the gorge, and walk through it to the crest of Lucifer Falls. Swim at the close of the excursion at the lower Enfield pool. July 27.

5. **Terminal Moraine, Kames, Esker, and Outwash Deposits.** By bus. Tickets. Varna, Freeville, and South Cortland. To study a massive morainic loop and the glacio-fluvial deposits which are well developed in this section. August 3.

All-day Excursions

6. **Watkins Glen.** By bus. Tickets in advance. Watkins Glen is one of the most beautiful scenic spots in the country. The party will study the gorge, its pot holes, and its falls in detail; and consider its relation to the Seneca Lake valley in comparison with the conditions at Ithaca in relation to the Cayuga valley. Luncheon at the head of the gorge. July 11.

7. **Northern Pennsylvania.** By bus. Tickets in advance. Geology of a coal mine and the physiography of the Susquehanna valley at Wyalusing Rocks. Stops will be made to study Appalachian structure, folds and faults, and the stratigraphy of a complete section from the Portage beds of the Devonian through the Pottsville conglomerate of the Pennsylvania. An exceptionally fine scenic trip over the Roosevelt Highway through southern New York and northern Pennsylvania. July 18.

8. **Sand Dunes of Lake Ontario.** By bus. Secure tickets in advance. Take lunch. To study glacial drainage phenomena, overflow channels, 'fossil Niagara' at the Clark, Reservation, high level lake deposits, drumlins, and the extensive and characteristic sand dune area at the east end of Lake Ontario. At the lunch hour there will be an opportunity for bathing in Lake Ontario. July 25.

9. **Connecticut Hill, Cayuta Lake and Outlet Gorge, and the Chemung Cut-Off.** By bus. Secure tickets in advance. Take lunch. Connecticut Hill is the highest point of the region, elevation 2095 feet. Survey of the Appalachian Plateau upland. Cayuta Lake, moraine dammed and its outlet gorge. The Chemung Cut-Off, classic site of glacial diversion of drainage. Visit Harris Hill, site of the National Glider Meets, to study physiographic and meteorologic factors that make this an exceptionally favorable place for soaring flight. August 1.

FIELD SCHOOL IN GEOLOGY

S 21. **Summer Field School in Geology.** Undergraduate and graduate; credit six hours. Professor NEVIN. May 25-July 3.

Registration limited to men. For details write for the special announcement.

GERMAN

S 1. **First Year German.** Grammar, reading, oral training, composition. Undergraduate; credit four hours. Entrance credit, one unit. Twice daily except Sat., 8 and 12. *GS* 183. Professor POPE.

After successfully completing this course, students can, by supplementary reading during the summer, prepare themselves for the College Board entrance examination in second year German.

S 2. **Military German.** Undergraduate and graduate; credit one hour. Twice weekly; time and room to be arranged. Professor POPE.

Some knowledge of German is desirable. Will be given only if five or more students register for the course.

S 8. **The German Folk Songs.** Undergraduate and graduate; credit two hours. Daily except Sat., 10. *GS* 177. Assistant Professor SCHNEIDER.

German Lectures. Lectures or interpretative readings in German will be given by members of the department on Wednesday evenings at 8:15 o'clock in *GS* 190.

GOVERNMENT

S 20. **Constitutional Law: The American Federal System.** Undergraduate and graduate; credit two hours. Prerequisite, the consent of the instructor. Daily except Sat., 11. *Boardman* 121. Professor CUSHMAN.

Judicial interpretation of the constitution: the nature of judicial review; separation of governmental powers; relations between state and national government; construction of national powers.

HEALTH EDUCATION

S 1. **Mental Hygiene.** Undergraduate and graduate; credit two hours. Daily except Sat., 8. *Stimson* 125. Dr. DARLING.

The human being considered as a psychobiologic unit in a complex environment. Discussion of (1) general personality structure, (2) maladjustment factors functioning at different ages from infancy through life, (3) the more common maladjustment symptoms and mental illnesses and their prevention.

S 2. **First Aid.** Undergraduate; credit two hours. Daily except Sat., 9. *Stimson* 125. Dr. BRITTON.

This course covers the materials usually included in the Red Cross Standard First Aid Course and the Red Cross Advanced First Aid Course and should lead to official certification in both Standard and Advanced First Aid. War-time emergencies created by the military gases and by explosions are considered as well as the usual peace-time emergencies.

S 3. **Health Problems of the School Child.** Undergraduate and graduate; credit two hours. Daily except Sat., 10. *Stimson* 125. Dr. SMILEY.

The mental and physical health problems commonly met with in the school child are discussed and the methods and organization for preventing and managing are pointed out.

S 4. **Home Nursing.** No credit. Daily except Sat., 11. *Old Armory*. Miss BUTLER.

The elements of home nursing will be discussed and demonstrated and opportunity for supervised practice of the ordinary home nursing procedures will be provided. The number in the course will be limited to thirty.

This course will be given only in the event that Family Life E 120 in the College of Home Economics cannot accommodate the number of students electing it.

HISTORY

S 3. **Constitutional Government and Autocracy in the Greek and Roman World.** Undergraduate and graduate; credit two hours. Daily except Sat., 11. *Boardman* 320. Professor LAISTNER.

The course will trace the alternation of absolute government and various types of

constitutional government in Greek and Roman History. Among the topics to be discussed will be the governments of the Greek city-states, Tyranny, Athenian democracy in its prime, some aspects of Greek political theory, the Hellenistic monarchies and federations, the earlier government of Republican Rome, the age of Cicero and Cicero's political ideas, Caesar's dictatorship, the principate in the first and second centuries, the military dictatorships of the third century, the absolutism of the later Imperial age.

S 9. The British Empire and Commonwealth. Undergraduate and graduate; credit two hours. Daily except Sat., 8. *Boardman* 122. Professor MARCHAM.

This course will deal with the role of the British peoples in recent world affairs. Special attention will be given to the government, economic activities, and geography of Great Britain, Canada, and Australia as they relate to the policies and problems of the United States.

S 18. The West in American History. Undergraduate and graduate; credit two hours. Daily except Sat., 10. *Boardman* 321. Associate Professor GATES.

A history of the westward movement with special attention to settlement, land, and agricultural problems, the removal of the Indians, transportation, sectionalism, and frontier democracy.

S 20. Recent American History: 1900-1942. Undergraduate and graduate; credit two hours. Daily except Sat., 8. *Boardman* 321. Associate Professor GATES.

Emphasis will be placed on business consolidation, labor problems, conservation, growth of social control, the World War, the League of Nations, causes of the great depression, the New Deal, and World War II.

S 23. Medieval Society. Undergraduate and graduate; credit two hours. Daily except Sat., 8. *Boardman* 320. Professor STEPHENSON.

Beginning with a sketch of feudalism and the manorial system, the course will emphasize the great social changes of the Middle Ages: especially the revival of commerce, the rise of the bourgeois class, and the development of representative institutions; guild organization, industry and capitalistic enterprise; the decay of the manor and the emancipation of the peasantry.

S 30. Recent History of the Far East. Undergraduate and graduate; credit two hours. Daily except Sat., 10. *Boardman* 122. Assistant Professor BIGGERSTAFF.

A study of the political, social, and economic background of international relations in Eastern Asia.

S 43. Europe: 1648-1789. Undergraduate and graduate; credit two hours. Daily except Sat., 9. *Boardman* 320. Professor DE KIEWIET.

The course will deal with the establishment of the power of Louis XIV in France and in Europe; the growth of constitutional monarchy in England; the English development of the principle of the Balance of Power; the decline of Holland and the rise of English commerce and colonial empire; the rise of Russia and Prussia; the Age of Reason, and the intellectual preparation of the French Revolution; the social and economic conditions in the principal countries; Enlightened Despotism; the outbreak of the French Revolution and the end of the Ancien Régime.

S 70. The History of Latin America. Undergraduate and graduate; credit two hours. Daily except Sat., 9. *Boardman* 122. Associate Professor GRIFFIN.

A study of the historical evolution of Latin America with emphasis on the background of contemporary problems.

Workshop on Latin America, the British Commonwealth of Nations, and the Far East. This Workshop operates under a grant from the Rockefeller Foundation and members of its staff offer three of the courses listed above. The purpose of the Workshop is to help a limited number of specially qualified student participants to develop instructional material in the three fields to meet the needs of pupils at various levels. Admission to the Workshop is limited and application for admission to it should be addressed to Professor Howard R. Anderson, Boardman Hall, Cornell University. The three courses offered by members of its staff are open to all Summer Sessions students.

HOME ECONOMICS

The courses in the Summer Session of the New York State College of Home Economics are planned primarily to meet the needs of teachers, extension workers, social service workers, and others who deal with homemaking practices and problems. Courses aim to strengthen the home economics background of these groups, to discuss problems pertinent to the situations in which they work, and to help them meet these problems more adequately.

Since Summer Session students in the field of Home Economics constitute a mature group, largely made up of professional persons, the approach in courses, even those of an introductory nature, is quite different from that in courses of similar title offered during the regular college year. Hence most of the courses are marked "graduate". Undergraduates are occasionally admitted but only by permission of the instructor; such permission should be secured by correspondence with the instructor in advance of registration.

Students registered in the Graduate School must notify the instructor at the beginning of Summer Session whether they wish credit toward a degree. Students planning to continue work in summer school for the M.S. degree under Plan B are asked to correspond with the professor concerned by May 15, if possible.

In the following pages, courses in Home Economics are listed by departments alphabetically arranged. In registering, students should give the course number, the name of the department, and the title of the course. All courses in Home Economics are given in *Martha Van Rensselaer Hall*.

ECONOMICS OF THE HOUSEHOLD AND HOUSEHOLD MANAGEMENT

E 310 (E 112). **Management in Relation to Family Living.** Graduate; credit three hours. Registration by permission of the instructor. Discussions, laboratory, and field trips. M W, 2-5; F, 2. Room G 19, Mrs. SMITH, Mrs. MACDONALD, and Miss AIKEN.

Study and discussion of the many different problems that families face in managing in their homes at this time; the variety of individual factors, such as health, energy, abilities, skills, time, and money, and of outside economic factors that are involved in home management; the different ways by which families achieve their individual purposes. Visits to homes to discuss with families their experiences in managing. Opportunity for work on the students' vocational problems in management. Fee, \$8, including transportation.

E 320. **Management in Relation to Household Equipment.** Graduate and undergraduate; credit two hours. Discussions and field trips. T Th, 2-4; F, 3. Room G 19, Miss REMSBERG.

Emphasis will be placed upon management in the use, care, and repair of household equipment to obtain maximum service from it at a time when labor is scarce, and to prolong its use when new equipment and new parts will be difficult to obtain. Homemakers, distributors, engineers, and others will participate in discussions and demonstrations. Field trips will be taken during class periods. Fee for the course, including transportation for trips, \$5.

Note. Attention of students interested in home management is called also to two courses in which this Department is cooperating, **Foods and Nutrition** E 265, and **Educational Leadership in Consumer Problems in Home Management**, E 340B.

EDUCATIONAL LEADERSHIP IN HOMEMAKING AND FAMILY LIVING

Leaders in community educational programs in nutrition, home nursing, conservation, management, consumer problems, child care, family morale, and other home and family problems, are offered the following opportunity to prepare for the leadership aspects of those jobs. Homemaking teachers, extension workers, nurses, nutritionists, parent educators, Farm Security supervisors, social workers, N.Y.A. leaders, homemakers with college training in Home Economics, county leaders, supervisors of homemaking programs, trainers of teachers and leaders, members of program-planning and advising

committees for homemaking education in connection with Civilian Defense and other community councils, and others who lead as professionals in out-of-school educational programs for families, are invited. Lay leaders are also welcome.

E 340. Program Planning and Methods. (Rural Education 134c; Adult Home-making Education.) Graduate; credit two or three hours, or four hours with *A* or *B*. Registration by permission of the instructor. Discussion, M W F, 11-1. *Room 121*. Assistant Professors HENDERSON and WIESENDANGER, and Mrs. DENNETT.

Individual and group conferences concerning students' own leadership jobs. Field trips to observe and participate in programs of out-of-school educational agencies near Ithaca (to be omitted by those registered for only two credit hours); personal conferences with professional and lay leaders. Discussion of the immediate importance of certain problems of families, of effective ways to work with families toward significant educational purposes, and of ways agencies may cooperate to plan and carry on programs and to develop leaders.

Students will find it helpful to bring with them information about the problems and educational needs of families in their communities, agencies operating there, and opportunities for cooperative educational leadership.

Estimated expenses for field trips, \$5-\$7. Fee \$4 or \$5, according to number of credit hours; \$6 with *A* or *B*.

E 340 A. Educational Leadership in Foods and Nutrition. Graduate. Registration by permission of the instructor: may be taken only in connection with E 340. Discussion hours with E 340 and two additional hours to be arranged. *Room 121*. Mrs. DENNETT.

In addition to the material of E 340 there will be the formulation of detailed plans for developing with families and agencies in the student's own locality a community educational program in *Foods and Nutrition*, and several alternative plans for organizing, coordinating, and teaching in that program; a study of current national, state, and local nutritional programs and of the agencies promoting them; assembling and evaluation of visual teaching aids.

E 340 B. Educational Leadership in Consumer Problems and Home Management. Graduate. Registration by permission of the instructor: may be taken only in connection with E 340. Discussion hours with E 340 and two additional hours to be arranged. *Room 121*. Assistant Professor WIESENDANGER.

In addition to the material of E 340 there will be the development of detailed plans for working educatively with families, in the student's own community, on problems of family management in a period of changing values, incomes, materials, and other resources; units in consumer problems, in the use of family resources, in the development of efficient work-areas and methods to conserve time and energy, and in other aspects of home management; a study of some national, state, and local agencies concerned with consumer and other management problems, and ways their programs can be coordinated; assembling and evaluation of visual teaching aids.

Note. It is recommended that students in E 340 A or B supplement that course by registration in E 265, **Managing Food Expenditures** (see *Foods and Nutrition*) or some other two-hour course in Management, Foods and Nutrition, Education, or Sociology.

Students registered for E 340 will find a concentration in one other area the most satisfactory supplement; for example, one three-hour course or two two-hour courses in one other phase of homemaking or in Sociology, or four hours in the educational workshop.

E 345. Adult Home-Making Education. Graduate and undergraduate; credit two hours. May not be counted for residence credit in the Graduate School. Also listed as Rural Education E 134d.

A two-week unit course for summer-employed Home Economics teachers; offered June 29 to July 11. This course will occupy the entire time of the student for the two-week period. First meeting of course, Monday, June 29, 4 p.m. *Martha Van Rensselaer Hall, Room 301*. Assistant Professor HENDERSON and others.

Observation, discussion and practice of educational procedures with adults in important aspects of home-making. Assembling and evaluation of visual teaching aids; experience in home visiting and leading groups; development of plans for use in the student's own community.

This course is offered provisionally: it will be cancelled if the registration is less than fifteen. Fees for the course; tuition, \$24, and expenses of trips, estimated at \$2. Advance correspondence or registration is required: the last date is June 15. Address correspondence to Professor GRACE M. HENDERSON, College of Home Economics, Cornell University.

E 350. **Individual Problems in Educational Leadership.** Graduate. Credit and hour to be arranged. Open to a limited number of students. Fee to be determined. Assistant Professor HENDERSON.

FAMILY LIFE

E 120. **Home Nursing.** Undergraduate and graduate; credit two hours. M W, 2-4:30. Room G 22. Mrs. PEABODY.

The home adaptation of hospital facilities and care; signs of illness and ways of caring for the patient in mild and chronic illness and convalescence; the care of emergencies until the doctor comes; home care of a patient who is seriously ill, with members of the family working under the supervision of a visiting nurse. Fee, \$3.

E 315. **Problems of Parents.** Graduate; credit two hours. Discussions, T Th, 2-4:30. Room 121. Professor WYLIE.

This course will deal with some of the basic problems facing parents in their parent-parent and parent-child relationships. Consideration will be given to problems of our own time as they affect parents of today. Fee, \$2.50.

E 316. **Resources for Parents and Leaders in a Family Life Program.** Graduate; credit two hours. Daily at 10. Room 124. Professor WYLIE.

A study will be made of materials available for use by groups of parents and other adults in their attempts to understand the problems in family relationships. Special attention will be given to professional problems of the individual students in the class. Fee, \$2.50.

E 330. **Participation in the Nursery School.** Undergraduate and graduate; credit two or three hours. Each hour of credit requires thirty laboratory hours, time to be arranged. Limited to 12 students. Registration by permission of the instructor. Prerequisite or parallel, an elementary course in child guidance. Conferences, three times a week to be arranged. Assistant Professor REEVES.

The course includes supervised participation in the Nursery School; some visiting of nursery school children in their homes; some experience in planning and evaluating a Nursery School program; and conferences with the teaching staff. Laboratory fee, \$5.

E 330X. **Planning and Organizing a Play Group.** Undergraduate and graduate; credit two hours. Each hour of credit requires thirty laboratory hours, time to be arranged. Limited to 12 students. Registration by permission of the instructor. Prerequisite or parallel, an elementary course in child guidance. Conference daily except Sat., 2. Room 124. Professor FOWLER.

The early part of the summer session will be given to organizing a group of children and parents, to equipping a play center for use, and to planning a tentative program of activities. During the rest of the session the play group will meet daily, thus giving students experiences in living with the children, in watching their development, and in evaluating with the parents the shared experience. This will be a demonstration of the kind of play group which might be set up in cooperation with parents in any community where there is qualified leadership. Laboratory fee, \$5.

E 410. **Principles of Child Guidance.** Graduate; credit two hours. Prerequisite or parallel, a course in Educational Psychology and a course in Psychology of Childhood and Adolescence or the equivalent. In-service workers with children and parents may enter without the prerequisite on permission of the instructor. Discussions daily except Sat., 8. Room 124. Professor WARING.

E 430. **Research in Family Life.** Graduate; credit one or two hours. Registration by permission of the instructor. Hours by arrangement. Professor WARING and Professor ROCKWOOD.

E 460. **Family Relationships and Personality Development.** Graduate; credit two hours. Daily except Sat., 9. Discussion groups: 8 to 10 persons meet once each week for an hour-and-a-half period. Room 121. Professor ROCKWOOD.

This course deals with the personal and social significance of the family experience in our culture, and the ways in which each member of the family relates himself to the family experience at each stage of his development. Attention will be given to the tensions arising in families as a consequence of the war emergency and national defense. Laboratory fee, \$2.50.

FOODS AND NUTRITION

E 130. **Elementary Nutrition and Dietetics.** Undergraduate; credit two hours. Lectures and discussions, M W Th F, 9. Laboratory, T, 9-11. Room 426. Mrs. FOSTER.

The significance of food selection in achieving and maintaining health. Emphasis on the nutritional needs of normal adults and on adequate diets at different levels of cost. Fee, \$3.

E 200. **Meal Planning, Preparation, and Service.** Undergraduate and graduate; credit two hours. Prerequisite, elementary courses in food preparation and nutrition. Limited to sixteen students. Lectures and discussions, T Th, 11. Room 343. Laboratory, M W F, 11-1:30. Room 361. Mrs. FOSTER.

Consideration will be given to problems involved in the purchasing of food, and in planning, preparing, and serving of meals. Emphasis will be placed on organization and management of time and energy. Trips will be made to nearby pottery and silver factories. Approximate cost of trips, \$2; fee, \$15.

E 265. **Managing Food Expenditures.** Undergraduate and graduate; credit two hours. Daily except Sat., 8. Room 426. Mrs. DENNET and Assistant Professor WILLIAMSON.

Problems that families face in the management of their food expenditures, such as: planning diets that will meet the nutritional needs of the various members of the family, at a cost in keeping with the family's income and with their objectives in managing; planning meals that include these needed foods and that satisfy the family in taste and appearance, with consideration for the time, effort, and skill required on the part of the homemaker in preparation; comparing the cost of making and of buying certain foods, and analyzing the advantages of each in managing in different situations; buying foods advantageously for the family and in the interests of economy for the retailer; conserving nutrients in storing and preparing foods in the home. Fee, \$3.

E 300. **Special Problems.** Graduate; credit and hours to be arranged. Registration by permission of instructor. Professor MONSCH or other members of the department, by arrangement.

Independent, advanced work on a problem not dealt with by other courses in the department. Primarily for graduate students who have nearly completed the work for a degree. Those wishing to register for this course should correspond with the instructor in advance. Fee determined by the problem.

E 325. **Advanced Nutrition.** Undergraduate and graduate; credit two hours. Registration by permission of instructor. Lectures and discussions, daily except Sat., 9. Room 339. Assistant Professor HATHAWAY.

Emphasis on the experimental data on which the principles of human nutrition are based, and a critical review of current literature in this field. Fee, \$1.

E 340. **Problems of Family Nutrition with Special Emphasis on Child Feeding.** Undergraduate and graduate; credit, lectures and discussions, two hours; with laboratory, three hours. Prerequisite, knowledge of general nutrition and dietetics obtained from previous college courses. Laboratory limited to twenty students. Lectures and discussions daily except Sat., 10. Room 339. Laboratory, T Th, 2-4:30. Room 426. Mrs. WATSON and Mrs. METCALF.

This course will include a study of family problems in nutrition, with special emphasis upon the nutritional needs of the child; the relation of nutrition to physical growth and development; and experience in actual family situations and preschool play groups. Fee, lecture, \$1; with laboratory, \$8.

Note. The attention of students is called also to Educational Leadership in Home-making and Family Living, E 340A, *Educational Leadership in Foods and Nutrition*, which is being given cooperatively with this department.

HOUSEHOLD ART

E 135. Home Projects in Room Improvement. Undergraduate and graduate; credit two or three hours. Lectures, discussions, and laboratory, M W, or T Th, 2-5. Additional laboratory to be arranged for those registered for three hours credit. *Room 318. Professor ROMAN and Miss NEBLETT.*

Planning for simple room-furnishing in which the cooperation of all family members may be enlisted. Practice will include remodeling of old furniture and construction of some new, simple pieces. Materials used will be those commonly found in rural and village homes. It will be helpful if those intending to take the course will write to the instructor for suggestions about materials that might be brought from home.

Students will be given help in improving their home surroundings at small cost, whether they live in a house, small apartment, or rented room. Teachers will be helped to accumulate illustrative materials for their own work. Estimated cost of materials and trips, \$7.50. Fee, \$2.50 a credit hour.

E 150. Housing from the Standpoint of Home Economics. Graduate; credit two or three hours. M W, 2-5. Discussions, laboratories, and field trips. Individual conferences to be arranged. *Room 3M14. Professor MORIN and Miss HUPP.*

A survey of the factors in present-day housing with which the individual is vitally concerned as homemaker, community member, or home-economics worker. A study of some of the problems involved in achieving adequate housing, and discussion of the contribution that home economics should be making toward the solution of these problems in cooperation with other agencies concerned; vocational opportunities for the home-economics graduate in the field of housing. Fee, \$5.

E 320. Home Furnishing—Special Home and Community Problems. Graduate; credit two or three hours. T Th, 2-5. Discussions, laboratories, and field trips. For three hours' credit, an additional laboratory to be arranged. *Room 408. Professor MORIN and Miss HUPP.*

Practical experience in solving furnishing problems in homes and in public rooms such as homemaking centers and other rooms for community use. Emphasis is placed upon economy and upon making the most of furnishings on hand. Each student who desires to work upon a problem of her own is requested to bring to the first class meeting photographs, measurements, samples of materials on hand and any other data helpful in working out the problem. As fully as time permits, opportunity is given teachers and extension workers to prepare demonstration material. Cost of material and trips variable, minimum \$3. Fee, \$2.50 a credit hour.

INSTITUTION MANAGEMENT

E 22. Canteen Cookery. A two weeks' unit running from June 29 through July 11. No credit. Class limited to fourteen students. Prerequisites: a high school diploma, or permission of the instructor, and some experience in quantity food preparation. Discussion periods and laboratories, daily, 8-1 and alternate afternoons, 2-5:30. *Room G 62. Mrs. LEAHY.*

Laboratory practice in the Home Economics cafeteria kitchen preparing foods for service in the Cafeteria. Some consideration will be given to the determination of quality standards and costing of recipes. Fee, \$8.

Other unit courses of interest may be found in the offerings of the School of Hotel Administration.

E 230. Selection and Preparation of Food in Quantity. Graduate and undergraduate; credit three hours. Registration by permission of the instructor. Class limited to fourteen students. Discussion periods and laboratories, M W F, 8-1, T Th, 2-5:30. *Room G 62. Miss ROBERTS and Mrs. LEAHY.*

For homemaking teachers who have responsibility for the school lunch and for others, working in the field of food administration, who have had a good background in elementary food preparation. Laboratory practice in the Home Economics cafeteria kitchen preparing foods in quantity for service in the Cafeteria. Some consideration will be given to purchasing food supplies, determination of quality standards and costing of recipes. Fee, \$10.

E 250. School Lunch Problems. Graduate and undergraduate; credit two hours. Limited to twenty students. Lectures and discussions, M W F, 2-4. *Room 121. Miss ROBERTS.*

A course planned for teachers who have not had courses in Institution Management, but who have responsibility for the school lunch. Problems of the group are discussed, including organization and management procedures, selection of furnishings and equipment, and purchasing of food supplies. Fee, \$1.

E 300. Special Problems. Graduate; credit one or two hours. Credit and hours arranged individually. Registration by permission of the instructor. For students qualified to do independent, advanced work on a problem not dealt with by other courses in the department. Fee determined by the problem.

TEXTILES AND CLOTHING

E 205. Clothing of the Family. Graduate or undergraduate; credit two hours. Registration by permission of instructor. Primarily for students interested in family life, teachers, and social workers. Laboratory and field practice, M W, 2-5. *Room 217.* Assistant Professor SCOTT.

A course to help students gain practical experience in meeting clothing problems as they occur in families, with special emphasis on the clothing needs of growing children. Visiting homes to study clothing problems. Practice in selection and construction, make-over and repair, care and refurbishing. Fee, \$5.

E 210. Dress Design. Undergraduate and graduate; credit two hours. Lectures, discussion, and laboratory, M W F, 10-1. *Room 215.* Assistant Professor FULLER.

This course is planned to give opportunity for creative experience through dress design and to develop appreciation of fine design in wearing apparel.

Design problems emphasize originality and discrimination in the use of texture combinations, structural detail, surface decoration, and color. In addition to original designs the work will include ways of using dresses and materials on hand, accessories, and other unusual means of creating interest and newness in costumes. Estimated cost of materials, \$5 to \$10; fee, \$5.

E 215. Fitting, Pattern Making, and Clothing Construction. Undergraduate and graduate; credit two hours. Prerequisite, fundamental courses in clothing selection and construction. Laboratory, T Th, 2-5. *Room 217.* Assistant Professor SCOTT.

Concentrated work in fitting, based on the use of the commercial pattern. The principles of fitting as related to pattern making and pattern adjustment. Pattern alterations and adaptation to individual figures. In construction, the emphasis will be placed on techniques used in the development of professional skill and on management and organization of work. Estimated cost of materials, \$10 to \$25. Fee, \$5.

E 320. Problems in Buying Clothing. Graduate; credit two hours. Limited to twenty students. Lectures, discussions, and laboratory, M W, 2-4; field trips, F, 2-5. *Room 215.* Assistant Professor FULLER.

A course dealing with variations in the needs and desires of different individuals as a basis for purchase and use of clothing. Buying practices of consumers; relationship of design, fashion, and construction to quality and cost of merchandise; government and industrial regulations, standards and specifications; services by retail stores, such as testing bureaus, consultant bureaus, and training of salespeople; sources of information available to consumers.

Trips to factories and stores in Ithaca and nearby towns will be planned. Estimated cost of materials and trips, \$10. Fee, \$5.

HOTEL ADMINISTRATION

In 1922 Cornell University established, with the cooperation and financial assistance of the American Hotel Association, a four-year course in Hotel Administration for high school graduates desiring to enter the administrative departments of the hotel business. Many hotel proprietors and managers, who have been unable to take a four-year university course, have asked for shorter courses with less formal entrance requirements.

To meet this demand, all Summer Session work in Hotel Administration is given in unit courses, one to three weeks in length. A circular giving full details of these courses has been issued and will be sent upon request. For this circular, for other information about the work in this department, and for admission to these courses, address Professor H. B. MEEK, Martha Van Rensselaer Hall, Cornell University, Ithaca, N. Y.

The first unit courses in this department begin on June 22. All courses are offered at the undergraduate level. Since these courses are planned chiefly as refresher courses and are not designed to integrate with any program looking toward a degree, academic credit is not ordinarily granted for them. Students who have met the regular admission requirements may, however, receive credit towards the bachelor's degree if they indicate at the time of registration their intention to work for such credit and secure approval thereof.

REQUIREMENTS FOR ADMISSION

Anyone employed in hotel work is eligible for admission. Prospective students will be required to present evidence of good character, of sincerity of purpose, and of interest in hotel work. It is distinctly to the advantage of prospective students to file applications early, in any event not later than June 15.

COURSES OF INSTRUCTION

H 11. **Hotel Operation.** Credit one hour. H 15. **Promotion.** Credit one hour. H 18. **Personnel Methods.** Credit one hour. H 22. **Quantity Food Preparation.** Credit two hours. H 24. **Institution Menu Planning.** Credit one hour. H 25. **Hotel Stewarding.** Credit one hour. H 26. **Hotel Menu Planning.** Credit one hour. H 31. **General Accounting.** Credit three hours.

H 32. **Hotel Accounting.** Credit three hours. H 33. **Interpretation of Hotel Statements.** Credit one hour. H 36. **Food and Beverage Control.** Credit one hour. H 39. **Problems in Hotel Accounting.** Credit one hour. H 71. **Hotel Housekeeping.** Credit one hour. H 81. **Hospital Operation.** Credit one hour. H 91. **Real Estate Management.** Credit one hour. H 153. **Problems in Hotel Administration.** Credit one hour.

LATIN

The work of the six-week Summer Session in the field of Latin study is intended primarily for actual and prospective teachers of the subject in the secondary schools.

A series of advanced courses is offered for those who by their undergraduate training are qualified to enter the Graduate School, or to continue their work therein, as candidates for the degree Master of Arts. Those teachers who by previous training and experience are similarly prepared to pursue courses in Latin on a graduate level will be admitted to the work of the Summer Session without registration in the Graduate School.

Prospective students in the 1942 Summer Session are invited to correspond with Professor JAMES HUTTON, Goldwin Smith Hall, Ithaca, N. Y., concerning the nature and the scope of the work in Latin. Those who wish to begin their candidacy for the degree Master of Arts should forward to the office of the Graduate School, on or before June 1, such credentials of undergraduate work leading to the degree of A.B. as will entitle them to admission to the Graduate School.

S 1. **Teachers' Course.** Graduate; credit two hours. Daily except Sat., 9. GS 124. Professor HUTTON.

The life of Cicero in relation to the political and social crisis of his time. Portions of Cicero's Letters and Speeches will be read as illustrating this topic. For teachers of high school Latin and graduate students.

S 2. **A Study of Ovid.** Undergraduate and graduate; credit two hours. Daily except Sat., 10. GS 124. Professor HUTTON.

Readings in the *Metamorphoses* and minor poems, with attention to the influence of Ovid upon later literature.

S 4. **Theses and Informal Work.** Graduate; credit by arrangement; total credit for thesis will not exceed six hours. Professor HUTTON.

Direction in the preparation of theses by candidates for the Master's degree, and in the investigation of special problems which arise in connection with the work of the individual teachers.

MATHEMATICS

Each member of the staff will have a daily office hour for consultation with students. It is urged that this opportunity be utilized by all concerned.

In the following list, courses S 10 to S 55b are equivalent to courses having the same numbers in the Announcement of the College of Arts and Sciences for 1941-42.

Courses S 10, S 15 are equivalent to the advanced entrance requirements of Cornell University and of the College Entrance Examination Board; they presuppose a ready knowledge of elementary and intermediate algebra and of plane geometry. They are also suitable for teachers in the secondary schools who wish to review the subjects.

Students taking S 55b are requested to take no other University work during the session without special permission from the Department of Mathematics.

S 15. Trigonometry. Undergraduate; credit three hours. Daily, 10. *White 101.* Professor CARVER.

S 16. Spherical Trigonometry and Map Projections. Undergraduate; credit three hours. Daily, 10. *White 121.* Associate Professor FLEXNER.

Designed primarily for students planning to enter war services.

S 55b. Analytic Geometry and Calculus. (Second term's work.) Undergraduate; credit five hours. Daily, 8 and 11. *White 221.* Dr. HERZOG. *White 211.* Dr. KAC.

S 90. Teachers' Course. Undergraduate and graduate; credit two hours. Daily except Sat., 9. *White 101.* Professor CARVER.

This course will treat certain selected topics in the mathematics taught in the secondary schools with a view to contribute to the enrichment of such teaching, and to give a clearer understanding of the meanings of certain of the concepts and processes involved.

S 200. Differential Equations and Ballistics. Undergraduate and graduate; credit three hours. Daily, 12. *White 215.* Assistant Professor CURTISS.

A first course in differential equations with application to elementary problems in ballistics.

S 309. Geometries. Undergraduate and graduate; credit three hours. Daily, 11. *White 121.* Associate Professor FLEXNER.

A study of geometries, mainly Euclidean and projective, and relations between them.

S 401. Statistics. Undergraduate and graduate; credit three hours. Daily, 10. *White 215.* Assistant Professor CURTISS.

A study of the theory underlying modern statistical analysis, and of the practical applications of this theory. The course is designed to furnish a background for further study in applied mathematics.

METEOROLOGY

A 1a. Meteorology. Undergraduate and graduate; credit two hours. Lectures and discussions. Daily except Sat., 10. *Plant Science 143.* Professor MORDOFF.

This course is adapted to the needs of teachers and students in subjects of which the weather is an important factor, particularly teachers of general science, physical geography, and agriculture. It is designed to acquaint the student with the laws governing the primary and secondary circulation of the atmosphere, and with the development, progression, and conditions that attend cyclones, tornadoes, and other atmospheric phenomena. Attention is given to the principles and practice of weather forecasting from weather maps and from local observations. Students taking the course at the graduate level will be assigned additional work.

A 1b. Meteorology, Laboratory Course. Undergraduate and graduate; credit one hour. Two laboratory periods to be arranged. Must be accompanied by course A 1a. *Plant Science 114.* Professor MORDOFF.

The work consists in the study of the principal weather and climatic elements with the aid of maps, charts, and instruments. The various meteorological instruments will be studied, as well as the methods of taking and recording the observations. Opportunity will be given the student for making practice forecasts. Students taking the course at the graduate level will be assigned additional work.

A 6. Special Problems. Undergraduate and graduate; credit and hours by arrangement. Professor MORDOFF.

Special work in Meteorology and Climatology may be elected by qualified students with the permission of the instructor.

MUSIC

S 11a. The Art of Music. Undergraduate; credit two hours. Daily except Sat., 10. *320 Wait Avenue.* Professor WEAVER.

An approach to the rational understanding and enjoyment of the art of music, offered especially for students who have had no technical training in music. This part of the course is devoted to the study of the smaller forms used in various types of vocal and instrumental music, especially as they are found in suites, operas, and oratorios.

S 13. The Orchestra. Undergraduate; credit two hours. Daily except Sat., 9. *320 Wait Avenue.* Assistant Professor INGALLS.

This course is offered for students who have had no technical training in music. It deals with the capacities and functions of the instruments of the orchestra singly and in combination, with the orchestra as a whole, and with various types of music written for orchestra.

S 21b. The History of Music. Undergraduate; credit two hours. Daily except Sat., 12. *320 Wait Avenue.* Professor WEAVER.

A survey of the evolution of the art of music, with the particular attention to the development of musical styles from period to period, and to the position of music in the artistic and social life of nations. This part of the course covers the period from the time of Bach and Handel to the present day.

Informal Study. Graduate; amount of credit and hours to be arranged. Professor WEAVER.

A limited number of graduate students will be accepted for informal study, and will be assigned to the proper specialist in the staff. Students interested in this work should consult Professor WEAVER at the beginning of the term.

S 401. Applied Music. Individual instruction in organ, piano, violin, viola, and voice. Credit one hour in the case of students majoring in music; for other students, no credit. Hours to be arranged. Messrs. GORE, GIBSON, INGALLS, and DUDLEY. *320 Wait Avenue.* Permission to register for this, with or without credit, should be secured from Professor WEAVER.

Individual instruction in organ is offered by Assistant Professor GORE, the University Organist; in piano by Mr. GIBSON; in violin and viola by Assistant Professor INGALLS; and in voice by Mr. DUDLEY. Students should consult the instructor at the beginning of the term as to hours for instruction, and the secretary of the Department of Music as to hours for practice.

The normal registration involves two half-hour lessons a week throughout the summer session, the fee being \$24 for the various instruments and \$40 in the case of vocal instruction. A term fee of \$3 is charged for a daily one-hour assignment to a practice room equipped with a piano. A term fee of \$11 is charged for a daily one-hour assignment for the use of a pipe organ in Bailey Hall or the Sage Chapel.

S 451. Piano Master Class. Individual instruction and group meetings for especially qualified advanced students of piano. Hours to be arranged. Dr. EGON PETRI, *320 Wait Avenue.*

A limited number of advanced piano students will be accepted for this course, which will last for eight weeks, closing on August 22. Those interested should consult Professor WEAVER.

Chorus. All men and women interested in singing in a Summer Session Chorus will meet at 5 p.m. on Thursday, July 2, in the choir loft of the Sage Chapel for discussion of plans and decision on a suitable schedule of rehearsals. The chorus will be conducted by Assistant Professor GORE.

Orchestra. Members of the Summer Session interested in joining the orchestra should consult Assistant Professor INGALLS on registration day at Barton Hall or immediately thereafter in his office in the *Music Building, 320 Wait Avenue.*

ORNITHOLOGY

A 9. Ornithology. Undergraduate; credit three hours. Lectures, M W F, 11. *Fernow 122.* Laboratory, M W, 1:40-4:30, or M W F, 9-11. Professor A. A. ALLEN and Dr. E. G. ALLEN.

This course provides an introduction to the study of birds and familiarity with the local species. The lectures cover classification, migration, coloration, song, nest-building, eggs, care of young, methods of attracting birds, and their economic importance. The laboratory work with bird skins, nests, and eggs gives an intimate knowledge of the birds of eastern North America, their life histories and distribution, and familiarity with the use of manuals. The aim of the field work is the identification of birds by their songs and habits as well as by their plumage. Each student should be provided with field glasses. Laboratory fee, \$3.

A 126. **Advanced Ornithology.** Undergraduate and graduate; credit three hours. Lectures, T Th, 11. *Fernow* 212. Laboratory, T Th, 1:40-4:30, and one other period by appointment. *Fernow* 212. Professor A. A. ALLEN. Registration limited to 15 students. Prerequisite, Ornithology A 9 or its equivalent. With special permission may be taken with A 9.

The structure and classification of the birds of the world; geographical distribution; the literature and institutions of ornithology; the preparation of bird skins and bird photography. Laboratory fee, \$3.

PHYSICAL EDUCATION

S 16. **Teaching Methods in Aquatics.** Undergraduate; credit one hour. M W F, 3. *Old Armory.* Mr. LITTLE.

Tested methods of teaching beginners to swim and dive. Coaching methods in competitive swimming. Theory and practice.

S 16a. **Swimming.** No credit. Men, M W F, 2. Women, daily except Sat., 4. *Old Armory.* Mr. LITTLE.

Instruction in beginning, intermediate, and advanced swimming and diving. A special fee of ten dollars is charged for 15 hours of class instruction. Individual instruction (one or two persons) one dollar a lesson for each person.

S 18. **Private Instruction in Tennis.** No credit. For men and women. Hours to be arranged. *Sage courts.* Mr. MURRAY. A special fee is charged, \$10 for ten lessons.

S 18a. **Tennis.** Undergraduate; credit one hour. For men and women. Daily except Sat., 3:30 and 4:30. *Risley courts.* Class instruction; registration limited to sixteen per hour.

PHYSICS

S 3. **Introductory Experimental Physics: Mechanics, Heat, and Sound.** Undergraduate; credit two or three hours. Of the three parts described below, the student may elect a, a and b, or all three parts without special permission; for any other combination, the student must have approval of the instructor. Parts a and b together constitute Physics 3 of the regular session. All three parts together constitute Physics 11 of the regular session and students taking these will register for Physics S 11.

a. Credit two hours. Demonstration lectures and recitations. Daily, 8. *Rockefeller A.* Professor GRANTHAM.

b. Credit one hour. Fourteen experiments, each requiring at least one laboratory period. Laboratory open M W F, 11-1. *Rockefeller* 252. Assistant Professor TOMBOULIAN and Mr. BOCK. Laboratory fee, \$5.

c. Credit one hour. Problem work, at hours to be arranged. *Rockefeller* 252. Professor GRANTHAM.

S 11. **Introductory Experimental Physics: Mechanics, Heat, and Sound.** Undergraduate; credit four hours. Parts a, b and c of Physics S 3, as described above. For hours and rooms, see that description. Laboratory fee, \$5.

S 60. **Intermediate Laboratory Physics.** Undergraduate and graduate; credit one to three hours. Prerequisites, an introductory course in college physics, and Mathematics S 15 or the equivalent. The laboratory will be open daily except Sat., 1:40-4. *Rockefeller* 352. Mr. GREISEN.

Experiments in mechanics, properties of matter, heat, light, and electricity may be performed. The experiments will be chosen to meet the needs and previous experience of the individual student. Laboratory fee, \$5 for each laboratory credit hour.

S 81. Recent Developments in Physics. Undergraduate and graduate; credit two hours. Prerequisite, a second year course in college physics or simultaneous registration in such a course. Daily except Sat., 9. *Rockefeller* 106. Assistant Professor TOMBOULIAN.

An introductory survey of recent advances in physics; including such topics as photoelectricity, thermionics, quantum theory, atomic spectra, x-rays, isotopes, radioactivity, nuclear physics, and cosmic rays.

S 106. Advanced Laboratory Physics. Undergraduate and graduate; credit one to three hours. Prerequisites, Physics S 60, 61, 62, and Mathematics S 55, or their equivalents. Laboratory open daily except Sat., 1:40-4. *Rockefeller* 301. Professor COLLINS.

The experiments will be chosen to meet the needs and previous experience of the individual student. Apparatus and equipment are available for work in a wide variety of fields, such as: optics, spectroscopy, x-rays, electrical measurements, electronics, and high temperature measurements. The experiments may be brief so that a wide range of topics will be covered, or a longer time may be spent on each of a relatively few experiments. Laboratory fee, \$5 for each laboratory credit hour.

[S 125. Electric and Magnetic Fields. Undergraduate and graduate; credit three hours. Not given in 1942: planned for 1943.]

S 126. Electrical Conduction and Related Phenomena. Undergraduate and graduate; credit two hours. Prerequisites, Physics S 60, 61, and Mathematics S 55, or their equivalents. Daily except Sat., 11. *Rockefeller* 109. Mr. GREISEN.

Electrical conduction in metals, electrolytes, gases and by emission in high vacua, motion of charged particles in electric and magnetic fields. Chemical and thermal electromotive forces, contact potential and work function.

S 136. Optics and Spectroscopy. Undergraduate and graduate; credit three hours. Prerequisites, Physics S 60, 61, and Mathematics S 55, or their equivalents.

Class work daily except Sat., 10. *Rockefeller* 107. Professor COLLINS. Laboratory (a), Sat., 8-10:30. *Rockefeller* 121. Professor COLLINS. Laboratory (b), any day except Sat., 1:40-4. *Rockefeller* 301. Professor COLLINS.

An intermediate course in geometrical and physical optics and the fundamentals of spectroscopy. The subject matter to be covered in class will include the laws of reflection and refraction with applications to optical instruments; dispersion, diffraction, interference, polarization and selected topics from the field of atomic spectra. Laboratory exercises which may consist of either: (a) the analysis of spectroscopic data; or (b) experimental work.

S 315. Special Topics for Investigation. Graduate; credit varies with the nature and amount of work done. Students who are prepared to profit by the use of the library and laboratory facilities of the Department in the study of some special topic or in investigation will be given an opportunity to do so. This work may be taken in connection with or independently of any of the above courses and will be under the direction of one or more members of the staff, with whom frequent conferences should be arranged. Students interested are advised to correspond with Professor COLLINS.

PLANT PATHOLOGY

A 1. Diseases of Plants and their Control. Undergraduate and graduate; credit two to four hours. Prerequisite, permission to register. Lectures, M W F, 8, and other times by arrangement. *Plant Science* 336. Laboratory, the completion of a minimum of four exercises for each credit hour, with personal conferences. Conferences by arrangement. Laboratory at the student's convenience. Professor WELCH and Dr. SPROSTON.

A fundamental course treating of the nature, cause, and control of plant diseases, illustrated by studies of the more common diseases of cultivated crops. The method of conducting the course enables the individual student to study diseases which are of particular interest to him. The work is designed to meet the special needs of teachers of agriculture in secondary schools, teachers of biology, and county agents, as well as undergraduates in Cornell and other colleges. Laboratory fee, \$1.25 a credit hour; breakage deposit, \$5.

PSYCHOLOGY

S 1. Introductory Psychology. Undergraduate; credit two hours. Lectures and recitations. Daily except Sat., 10. *GS A*. Professor DALLENBACH.

This course deals with the basic problems and principles of human psychology and is designed as a general foundation for the study of experimental, social, animal, and child psychology, for psychotechnology, and for the psychology of the abnormal. Class demonstrations will supplement the lectures and demonstrations. Textbook: Boring, Langfeld, and Weld, *Psychology: A Factual Textbook*.

S 2. Fields of Psychology. Undergraduate; credit two hours. Prerequisite, Introductory Psychology. Daily except Sat., 9. *Morrill* 340. Assistant Professor KREEZER.

A survey of the fields of animal, genetic, differential, social, applied, abnormal, and physiological psychology, illustrated by representative problems in these special fields. Textbook: J. P. Guilford, *Fields of Psychology*.

S 6. Attention. Undergraduate and graduate; credit two hours. Daily except Sat., 8. *Morrill* 306. Professor DALLENBACH.

In this course the application of attention to advertising, to hypnosis, to testimony, to efficiency, and to learning, will receive special emphasis. The application will, however, be made only after the student has been grounded in the elementary facts and laws of attention. The development, the conditions, the kinds, and the levels of attention will first be considered; then the experimental investigations will be reviewed; and thereafter the practical considerations will be taken up.

Demonstrations and class-experiments will be used frequently for illustration. No textbook will be prescribed, but the lectures will be supplemented by assigned readings in standard works.

S 10. Social Psychology. Undergraduate and graduate; credit two hours. Daily except Sat., 10. *Morrill* 306. Assistant Professor WHITE.

Motives and mechanisms operating in the psychology of large groups; propaganda, public opinion, war, nationalism, race prejudice, and class conflict.

S 15. Psychology of the Abnormal. Undergraduate and graduate; credit two hours. Daily except Sat., 11. *Morrill* 340. Assistant Professor KREEZER.

A survey of the psychological disorders and deficiencies: mental deficiency; epilepsy; hysteria, neurasthenia, psychasthenia, and the war neuroses; schizophrenia, manic-depressive psychoses, and organic psychoses. A consideration of psychological, physiological, and genetic factors.

S 16. Psychology of Nationalism. Undergraduate and graduate; credit two hours. Prerequisite, at least one college course on recent European history or international relations. Daily except Sat., 12. *Morrill* 306. Assistant Professor WHITE.

Aggressive nationalism and isolationist nationalism as related to the problems of war-causes, war morale, and post-war reconstruction; nationalist psychology as related to economic factors, to the psychology of religion, and to the problem of displaced aggression.

RUSSIAN

S 1a. Introductory Course. Undergraduate; credit four hours. This course is offered provisionally, and will be cancelled if the registration is less than fifteen. Advance registration or correspondence is required; last date, June 15. Daily except Sat., 10-12. *GS* 128.

An intensive study of the Russian language for beginners. Fundamental rules of grammar, composition, and reading. Individual tutorial instruction will be included.

In addition to this introductory course, two intensive courses in the Russian language will be offered in cooperation with the American Council of Learned Societies. These courses are planned to give students the special training and knowledge of the language which will meet the standards set by governmental agencies connected with war work.

Special tuition fees are charged, as stated in the descriptions below, and the American Council of Learned Societies offers a limited number of tuition scholarships to qualified applicants. Application for admission to these courses, and all correspondence with regard to them, should be addressed to Professor ERNEST J. SIMMONS, Director of Intensive Russian Study, Goldwin Smith Hall, Cornell University. Applications for admission cannot be considered after May 15.

S 20. Intensive Introductory Course. Undergraduate; credit twelve hours. An intensive course of fifteen hours a week for twelve weeks, with one week of vacation after the sixth week; June 15 to September 12. Classroom work will occupy ten hours a week, tutorial work five hours. Open to students in the last year of college or in graduate school, but without previous training in the subject. Tuition fee, \$300.

S 30. Intensive Advanced Course. Undergraduate; credit six hours. An intensive course of fifteen hours a week for six weeks: June 15 to July 25. Classroom instruction ten hours a week, tutorial work five hours. Open to students who have had two years of college instruction in Russian, or equivalent. Tuition fee, \$150.

SOCIOLOGY AND RURAL SOCIOLOGY

S 1. General Sociology. Undergraduate; credit two hours. Daily except Sat., 8. *McGraw* 201. Assistant Professor SHARP.

The analysis and utilization of concepts and principles of sociology, with special emphasis on groups, institutions, social processes, and social change.

A 12. Rural Sociology. Undergraduate; credit two hours. Daily except Sat., 8. *Warren* 325. Professor ANDERSON.

A study of the groups, organizations, and institutions found in rural society, their structure and functions. Consideration of the means of rural social improvement.

A 20. Social Problems. Undergraduate and graduate; credit two hours. Daily except Sat., 10. *Warren* 340. Professor ANDERSON.

A study of the maladjustments in society, such as crime, poverty, sickness, old age, accident, degeneracy, insanity, class and racial struggles, and consideration of how society attempts to deal with these problems.

S 60. Social Anthropology. Undergraduate; credit two hours. Daily except Sat., 11. *McGraw* 201. Assistant Professor SHARP.

Problems in the analysis and comparison of the cultures of primitive communities as a basis for the study of more complex societies; elementary forms of social organization; inter-relation of elements within a total culture; culture patterns and the individual.

A III. Rural Community Organization. Undergraduate and graduate; credit two hours. Daily except Sat., 9. *Warren* 302. Associate Professor POLSON.

Designed to give an understanding of community life: its organization, its problems of social change, its programs for development and its leadership. Special attention will be given to recent developments in school-community relationship and techniques for community organization and planning. Correlated with the Field Study of Community Resources of the Educational Workshop (page 33).

SPANISH

S 1. Elementary Course. Undergraduate; credit four hours. Entrance credit, one unit. Twice daily except Sat., 8 and 12. *GS* 281. Professor DALE.

The fundamentals of the language, oral and written. Reading of simple texts.

S 3. Reading and Composition. Undergraduate; credit four hours. Entrance credit, one unit. Twice daily except Sat., 8 and 12. *GS* 277. Professor BERGIN.

Prerequisite, Spanish S 1 or two years of high school Spanish.

S 49. Course for Teachers. Undergraduate and graduate; credit two hours. Daily except Sat., 11. *GS* 277. Professor DALE.

Grammar review, phonetics, reading and composition. Lectures in Spanish on Spanish and Latin American social and cultural topics.

S 50. Supervised Study and Supervision of Theses. By appointment with Professor DALE. *GS* 271.

SPEECH AND DRAMA

Students may confer either with the departmental representatives in Barton Hall, or with the individual instructors, who will be in their offices both on registration day and on the first day of instruction. For information about advanced work in Speech Training and Phonetics, consult Mr. THOMAS, *GS* 23; in Rhetoric and Public Speaking, Mr. WICHELS, *GS* 252, or Mr. WAGNER, *GS* 235; in Drama and the Theatre, Mr. DRUMMOND, *GS* 244, or Mr. STANTON, *GS* 239.

PUBLIC SPEAKING

S 1. Public Speaking. Undergraduate; credit two hours. Daily except Sat., 11. GS 21. Associate Professor WAGNER.

Practice in speech-making, on topics of current interest. Methods of preparation and delivery studied in relation to practice; class discussions; conferences. Regular students passing the course are admitted to Public Speaking 2 and 12.

Enrollment will be limited; students must apply on registration day to the Departmental representatives in Barton Hall.

S 2. Discussion and Debate. Undergraduate and graduate; credit two hours. Daily except Sat., 10. GS 26. Associate Professor WAGNER.

Practice in discussion and debate of current public questions; committee and panel discussion; cross-examination; forum debate; planning and leading meetings. Study of principles; conferences. Discussion leaders and directors of debate will receive special assistance.

S 21. History of Public Address. Undergraduate and graduate; credit two hours. Daily except Sat., 12. GS 234. Professor WICHELS.

A survey of leading orators both ancient and modern, with attention to oratory as a social institution. Demosthenes, Cicero, Burke, and certain American speakers. Lectures, readings (in English versions), and reports.

S 100. Theses and Special Problems. Graduate; credit two or more hours. Consult Professor WAGNER or Professor WICHELS. In registering for this course, the name of the professor with whom the work is to be done must be stated.

SPEECH IMPROVEMENT AND PHONETICS

S 32. Teachers' Course in Phonetics and Speech Training. Undergraduate and graduate; credit two hours. Daily except Sat., 9. GS 21. Mr. MOUAT.

A study of English phonetics, pronunciation, and the improvement of speech; primarily for secondary and elementary school teachers.

S 34. Principles of Phonetics. Undergraduate and graduate; credit two hours. Daily except Sat., 9. GS 26. Associate Professor THOMAS.

A study of the phoneme, the aspirate, assimilation, and other aspects of sounds in combination. Open to students who are familiar with the basic facts of American phonetics.

S 36a. Methods of Speech Correction. Undergraduate and graduate; credit two hours. Daily except Sat., 10. GS 21. Associate Professor THOMAS.

Analysis and treatment of lisping, foreign dialect, and other articulatory deviations from normal English.

S 200. Theses and Special Problems. Graduate; credit two or more hours. Consult Professor THOMAS. In registering for this course the name of the professor with whom the work is to be done must be stated.

Speech Clinic. No credit. For students working under the direction of the department. Associate Professor THOMAS and Mr. MOUAT. GS 23 and 25. By appointment.

The courses required for the degree of Master of Arts in Public Speaking and Speech Training are offered through a rotation of courses in a minimum of five summers. Candidates will take, or offer suitable equivalents for S 1, S 2, and S 10; six hours in each of the following four divisions: Rhetoric and Public Speaking, S 14, S 20, S 21, S 22, S 28; Speech Improvement and Phonetics, S 32, S 33, S 34, S 36, S 36a, S 36b; Dramatic Production, S 41, S 42, S 44, S 45, S 45a, S 48, S 66, S 68, S 90; electives in English, History, Government, Sociology, Psychology. In addition, each candidate will offer four hours in one of the three departmental divisions, and during the final summer will register in S 100 or S 200 for the writing of a thesis or extended essay.

DRAMA AND THE THEATRE

S 41. Dramatic Production. Undergraduate and graduate; credit two hours. Daily except Sat., 10. *Stage Laboratory, Morse.* Assistant Professor CURVIN.

For upperclassmen and graduates. Theory of stage direction; fundamentals of theatrical mounting; survey of practical phases of production. Prerequisite for further graduate work in Dramatic Production.

S 42. **Dramatic Interpretation and Acting.** Undergraduate and graduate; credit two hours. M W F 2-4. GS B. Mr. MOODY.

A practice course in oral interpretation, pantomime, acting, and group rehearsal.

S 44. **Advanced Dramatic Production.** Undergraduate and graduate; credit two hours. Prerequisite, S 41 or the equivalent. By assignment. Associate Professor STAINTON.

Specific assignments in the presentation and production of plays.

S 45. **Stagecraft and Stage Lighting.** Undergraduate and graduate; credit two hours. Daily except Sat., 12. *Stage Laboratory, Morse.* Mr. TRAPIDO.

Planning of small theatres; problems and practice in construction and design; elements of stage lighting; assignments will vary with the needs of the individual. Laboratory fee, \$5.

S 68. **Modern Theories of Stage Presentation.** Undergraduate and graduate; credit two hours. Daily except Sat., 11. GS 236. Associate Professor STAINTON.

A study of the work of Craig, Appia, Fuchs, and others who have influenced contemporary stage production.

S 90. **Technical Theatre Practice.** Undergraduate and graduate; credit two hours. Hours to be arranged. Prerequisite, consent of instructor. Register in GS 25. Mr. TRAPIDO.

Technical practice coordinated with the regular productions of the Summer Theatre; readings on the techniques involved.

S 300. **Special Problems and Theses.** Graduate; credit two or more hours. Hours to be arranged. Consult Professor DRUMMOND or Associate Professor STAINTON. On registering for this course the name of the professor with whom the work is to be taken must be stated.

Required of regularly registered graduates working on theses. Open to other graduates prepared for independent study of special topics in the field of drama and the theatre.

The courses required for the degree of Master of Arts in dramatic production are offered through a rotation of courses in a minimum of five summers. Candidates will take, or offer suitable equivalents for S 1, S 10, S 41; in Drama and Theatre six hours from S 45, S 45a, S 48, S 66, S 68; eight hours from S 42, S 44, S 45a, S 90, S 95; in Dramatic Literature, English S 17, English S 31; in Speech Improvement and Phonetics, six hours from S 32, S 33, S 34, S 36, S 36a, S 36b; in Rhetoric and Public Speaking, four hours; and during the final summer will register in S 300 for the writing of a thesis or extended essay based on one of the advanced courses.

ZOOLOGY

S 1a. **Introductory Zoology.** Undergraduate; credit three hours. Equivalent to Zoology 1, first term. Lectures, daily, 8. *Stimson* 116. Laboratory, M W F, 11-1. *Stimson* 116. One field trip to be arranged. Associate Professor YOUNG.

An introduction to the morphology, physiology, and ecology of animals lacking backbones, stressing the nature of the progressively improved body plans of representatives of the major divisions of the animal kingdom. Laboratory fee, \$2.50.

A 8. **Vertebrate Zoology and Ecology.** Undergraduate and graduate; credit four hours. Lectures, laboratory and field work. M T W Th, 1:40-5:00. *Stimson* 225. Associate Professor HAMILTON.

Lectures and laboratories on fishes, amphibians, reptiles, birds, and mammals. Field work is partly to give practice in the ready identification of local vertebrates in their natural environment and to introduce ecological methods, collecting and preparation of vertebrates and introduce research methods. Numerous field trips will be taken. Laboratory fee, \$3.

For courses in **Ornithology**, see under that heading.

SCHEDULE OF EXAMINATIONS IN SIX-WEEK SESSION

Friday, August 7 and Saturday, August 8

With a few exceptions, examinations will be held as scheduled below. In most of the exceptional cases, the examinations will be given on Thursday at 2.

The usual class rooms will be used for examinations in most cases; change of rooms will be announced by the instructors.

Conflicts in examinations should be reported to the instructors in charge of the two conflicting courses.

In courses which meet for more than one hour daily, the examination period is determined by the first hour at which they meet. Examples: German S 1, meets daily at 8 and 12; examination, Friday at 8. Botany S 1a, meets daily at 10-12:30; examination, Friday at 10:30.

In a single course in which both laboratory and lecture work is included, the examination is scheduled in the lecture period.

In courses in which no examination is to be given, an announcement to that effect will be made by the instructor.

8 o'clock classes, Friday at 8.

9 o'clock classes, Saturday at 8.

10 o'clock classes, Friday at 10:30.

11 o'clock classes, Saturday at 10:30.

12 o'clock classes, Friday at 2.

Afternoon classes which meet Monday, Wednesday, or Friday, Thursday at 2.

Afternoon classes which meet Tuesday and Thursday, Saturday at 2.

Afternoon classes which meet every afternoon, Saturday at 2.

ELEVEN-WEEK SESSION

JUNE 29-SEPTEMBER 12, 1942

In general, courses offered in this Session are continuous through the eleven weeks, and credit will not be given for a part of the period. However, several of the courses in the sciences are divided into two parts, and credit will be given for the first half of such courses. In all such cases, the first half of the course is also listed in the six-week Session. If the second part of a course may be entered without first completing the first part, it is also listed in the second five-week Session.

Students registering in the eleven-week Session may include courses in the six-week Session and in the second five-week Session in their programs of study.

BIOLOGY

A 1. General Biology. Undergraduate; credit six hours. Lectures, daily, 8; laboratory, M W F, 11-1. *Roberts* 302. Assistant Professor HOOD and Dr. NEVIN.

An elementary course planned to meet the needs of students majoring outside of the plant and animal sciences; particularly adapted as the first year of a two-year sequence in biology for the prospective teacher of general science in the secondary schools. The course deals with the nature of life, life processes, the activities and origin of living things. It covers the organization of representative plants and animals, including man as an organism, and the principles of nutrition, growth, behavior, reproduction, heredity, and evolution. Fee, \$7.

CHEMISTRY

The courses announced below correspond to courses given during the regular session of the University. For regular students the requirements for admission to the various courses will be the same as during the year.

In some laboratory courses a deposit to cover the usual laboratory fee and also breakage and other variable items of expense is charged. At the end of the course the laboratory fee and breakage charge are determined and the unexpended balance is returned to the student. In other courses a laboratory fee of fixed amount is charged. The amount of the deposits and laboratory fees are indicated in the descriptions of courses.

All courses in Chemistry are given in the *Baker Laboratory of Chemistry*.

S 102. General Chemistry. Undergraduate; credit six hours. For students who have not had high school chemistry. Lectures, M W F, 8. *Main Lecture Room*. Recitations, T Th S, 8. Laboratory, M W F, 11-1. Professor LAUBENGAYER and Dr. TAUBE.

This course deals with the fundamental laws and theories of chemistry and the properties of the more common elements and their compounds. Deposit, \$20.

S 104. General Chemistry. Undergraduate; credit six hours. For students who have received entrance credit for high school chemistry. Rooms, hours, and deposit the same as for S 102 above. Professor LAUBENGAYER and Dr. TAUBE.

S 310a. Introductory Organic Chemistry. Undergraduate and graduate; credit three hours. Prerequisite, chemistry 305. M T Th, 1:30-5. Assistant Professor MILLER. Laboratory practice and oral reviews. Deposit, \$35.

S 320. Advanced Organic Chemistry. Undergraduate and graduate; credit two to six hours. Laboratory practice at hours to be arranged. Assistant Professor BRUCE.

An advanced course in the preparation of organic compounds, involving the use of the more difficult methods and of the less common reagents. Fee variable.

S 375. Elementary Organic Chemistry. Undergraduate and graduate; credit five or six hours. Prerequisite, a course in general chemistry; a course in qualitative analysis is helpful but not required. Lectures, daily except Sat., 8. *Room* 207. Laboratory and conferences: Section a, for Veterinary students, W, 1:30-2:30, Th, 1:30-5; section b, for others, M T, 1:30-5, F, 1:30-2:30. Assistant Professor BRUCE.

A short, general course in organic chemistry. Deposit, \$25.

S 325. Special Topics in Organic Chemistry. Graduate; credit two hours. Prerequisite, one year of organic chemistry. M W F, 8, Room 206. Dr. BLOMQUIST.

A review of significant developments in theoretical and applied organic chemistry during the past twenty years.

ENGLISH

S 2a. Introductory Course in Composition and Literature. Undergraduate; credit three hours. T Th S, 10; W, 2. *GS* 162. Associate Professors TENNEY and SALE. Equivalent to the first term of English 2 in the regular session. Required of freshmen entering this session.

S 2b. Introductory Course in Composition and Literature. Undergraduate; credit three hours. T Th S, 8; F, 11. *GS* 162. Associate Professor TENNEY.

The equivalent of the second term of English 2 in the regular session. Offered provisionally; will be cancelled if registration is insufficient.

S 20. Prose and Composition. Undergraduate; credit four hours. Daily except Sat., 9. *GS* 160. Dr. CURTIN.

A study of the essentials of clarity, and of various means toward interest, with stress upon the student's own writing, in class and at individual conferences.

FINE ARTS

S 1a. History of Painting and Sculpture. Undergraduate; credit three hours. T Th S, 11, F, 2. *GS*, *Museum of Casts*. Associate Professor WAAGÉ.

The development of pictorial and sculptural forms and styles to meet the varying needs of human cultures from the Old Stone Age to the Renaissance.

FRENCH

S 4a. Reading of French. Undergraduate; credit three hours. Prerequisite, French 3a or third year entrance French. M W F, 9; T, 2. *GS* 281. Mr. MCBURNEY.

Translation and rapid reading. The purpose of the course is to give the student a satisfactory reading knowledge of the language.

S 5a. Written and Spoken French. Undergraduate; credit three hours. Prerequisite, French 5a or 6, or fourth year entrance French. T Th S, 9; M, 2. *GS* 281. Mr. MCBURNEY.

Rapid review of grammar and practice in elementary composition.

Courses 4a and 5a are approximately equivalent to French 6, as offered during the regular session of the University.

GERMAN

S 3. Intermediate German. Undergraduate; credit three hours. Prerequisite, German 1 or 1a, or two years of high school German. M W F, 9; T, 2:40. *GS* 177. Assistant Professor SCHNEIDER.

Reading, grammar, composition, and oral training.

GOVERNMENT

S 1. American National Government. Undergraduate; credit three hours. M W F, 10; Th, 12. *Boardman* 110. Professor CUSHMAN.

American national government, its historical development, organization, powers, and practical working.

S 9. Introduction to International Relations. Undergraduate and graduate; credit three hours. M W F, 10; Th, 12. *Boardman* 121. Professor BRIGGS.

A survey of nationalism, internationalism, imperialism, and the racial, political, economic, and geographical factors in modern international relations.

S 16. Contemporary American Foreign Policy. Undergraduate and graduate; credit three hours. M W F, 8; T, 12. *Boardman* 121. Professor BRIGGS.

Stress will be placed on the Far Eastern and Latin American policies of the United

States since 1898, in the light of European conditions and the evolution of a global foreign policy for the United States.

HEALTH EDUCATION

S 5. Military Hygiene. Undergraduate; credit two hours. M W F, 3. *Stimson* 125. Professor SMILEY.

The personal hygiene of the man in military service; field sanitation and first aid. Five two-hour evening periods in first aid practice are required during the course in addition to the three regular lectures a week. Credit for completion of one-half of the twenty-hour Red Cross Standard First Aid Course is provided for this evening work.

LATIN

S 1a. Cicero, De Senectute. Undergraduate; credit three hours. M W F, 9, T, 2. *GS* 128.

For students offering three or four units of entrance Latin. Open to incoming freshmen: offered provisionally.

MATHEMATICS

S 2. Cryptanalysis. Undergraduate; credit three hours. T Th S, 9, M, 2. *White* 111. Professor HURWITZ.

The study of the standard forms of ciphers and codes, and the methods used for their decipherment. Although no secret methods or very recent procedures of deciphering will be treated, the course should be useful to students who contemplate cryptographic employment (commissioned or civilian) in the naval or military service of the United States; opportunities for such employment may be available to women as well as men. There is no definite mathematical prerequisite; no student should take the course unless he has some facility at precise reasoning, as well as some natural feeling for the ways in which letters tend to combine to form words. With reference to future employment, acquaintance with one or more foreign languages may be helpful. Students who contemplate taking the course should consult the instructor before registering.

S 10. College Algebra. Undergraduate; credit three hours. T Th S, 11, F, 2. *White* 115. Assistant Professor WALKER.

S 15. Trigonometry. Undergraduate; credit three hours. M W F, 10, Th, 12. *White* 123. Associate Professor LAWRENCE.

S 60a. Analytic Geometry and Calculus. Undergraduate; credit three hours. Primarily for students in the Engineering colleges. Prerequisite, Mathematics 15, and Mathematics 5 or 10, or the equivalent. M W F S, 9, *White* 103. Associate Professor ROSSER. M W F S, 9, *White* 123. Associate Professor LAWRENCE. M W F S, 9, *White* 115. Assistant Professor WALKER. M W F S, 12. *White* 111. Professor HURWITZ. M W F S, 12. *White* 103. Associate Professor ROSSER.

S 65a, S 65b, S 65c. Analytic Geometry and Calculus. Primarily for students in the College of Arts and Sciences. Prerequisites, Mathematics 15, or its equivalent, and a reasonable preparation in algebra to be shown either (a) by credit for Mathematics 10 or its equivalent, or (b) by passing satisfactorily an optional qualifying examination in elementary and intermediate algebra to be offered by the Department of Mathematics on June 29. A student who satisfies the prerequisite in either trigonometry or algebra will be permitted to take either Mathematics 10 or 15 simultaneously with Mathematics 65a. Some students may find their needs adequately covered by 65a and 65b; students interested in Mathematics or allied subjects will be expected to take 65a, 65b, and 65c.

S 65a. Analytic Geometry and Calculus. Undergraduate; credit three hours. M W F, 9, Th, 12. *White* 111. Professor HURWITZ.

S 65b. Analytic Geometry and Calculus. Undergraduate; credit three hours. T Th S, 10, W, 2. *White* 103. Associate Professor ROSSER.

S 65c. Analytic Geometry and Calculus. Undergraduate; credit three hours. M W F, 10, Th, 12. *White* 115. Assistant Professor WALKER.

MILITARY SCIENCE AND TACTICS

S 1. **Basic Course, Second Year.** Undergraduate; credit one hour. T or Th, 1:40-4:40. *Barton Hall*.

Required of all able-bodied first and second year male students in the University. Freshmen entering at this time will be expected to take this course unless specifically permitted to defer it to the fall term.

PHILOSOPHY

S 1a. **Philosophical Classics.** Undergraduate; credit three hours. T Th S, 11; F, 2. *GS 221*. Associate Professor ROBINSON.

A careful study of Lucretius, *On the Nature of Things*, Plato's *Republic*, and J. S. Mill, *On Liberty*. In studying Plato and Mill, special attention is paid to the philosophy of democracy.

PHYSICAL TRAINING

S 1. **Physical Training for Men.** Undergraduate; credit one hour. Four periods a week, by arrangement at the time of registration.

S 6. **Physical Education for Women.** Undergraduate; credit one hour. Four periods a week, by arrangement at the time of registration.

PHYSICS

S 3, 4. **Introductory Experimental Physics.** Undergraduate; credit six hours. S 4 may be taken by students who have not taken S 3. Demonstration lectures and recitations, daily, 8. *Rockefeller A*. Professors GRANTHAM and HOWE. Laboratory, M W F, 11-1. *Rockefeller 252*. Assistant Professor TOMBOULIAN and Mr. BOCK. Laboratory fee, \$10.

S 11, 12. **Introductory Experimental Physics.** Undergraduate; credit eight hours. Rooms and hours as for S 3, 4, with the addition of problem work at hours to be arranged. Laboratory fee, \$10.

S 12. **Introductory Experimental Physics.** Undergraduate; credit four hours. Prerequisites, trigonometry and concurrent registration in Mathematics 60a or 65a. Lectures and recitations, daily except Sat., 11. Laboratory open M W F, 1:40-4. *Rockefeller 252*. Dr. NEWHALL.

This is the second term of the usual freshman course for engineers, and deals with electricity and light. Fourteen laboratory experiments are required. Laboratory fee, \$5.

S 55. **Intermediate Laboratory Physics.** Undergraduate; credit three hours. Prerequisite, Physics 3 and 4, or their equivalents. Lecture, S, 8. Laboratory, T Th, 10-1. *Rockefeller 352*. Assistant Professor BARNES.

Fundamental experiments in properties of matter, heat, light, and electricity. Intended primarily for students preparing for Medicine or majoring in Biology.

SPANISH

S 1a. **First Course for Beginners.** Undergraduate; credit three hours. T Th S, 9; M, 2. *GS 283*. Mr. RODRIGUEZ.

This is the first term of Spanish 1, as offered in the regular session. The second half of Spanish 1 will be given in the fall term as Spanish 1b.

S 3a. **Second Course.** Undergraduate; credit three hours. Prerequisite, Spanish 1 or equivalent. M W F, 9; T, 2. *GS 283*. Mr. RODRIGUEZ.

The second half of Spanish 3 in the regular session will be given as Spanish 3b in the fall term.

ZOOLOGY

S 1. **Introductory Zoology.** Undergraduate; credit six hours. Lectures, daily, 8; laboratory, M W F, 11-1. *Stimson 116*. Associate Professors YOUNG and LEONARD.

Structural and functional organization of a complex animal is studied. Comparisons are made of the body plans of a graded series of animals representing the major divisions of the animal kingdom. Classification, interrelationships, and adaptations are discussed, also the critical periods in the evolution of the vertebrates and of man. Laboratory fee, \$6.

S 11. Comparative Anatomy of Vertebrates. Undergraduate and graduate; credit six hours. Lectures, M W F, 9. *Stimson* G 25. Laboratory, T Th, 9-12, 1:40-4:30. Dr. GILBERT and assistants.

A thorough study and dissection of representative vertebrate types including a fish, amphibian, reptile, bird, and mammal, together with demonstrations on species other than the types dissected. Laboratory fee, \$9.

S 101. Histology. Undergraduate and graduate; credit four hours. No prerequisite, but previous work in biology, zoology, and botany or physiology is recommended. Lectures, M W F, 9. *Stimson* G-1. Laboratory; Section A, for students of Veterinary Medicine, M T F, 2-4:30; Section B, W Th, 2-4:30; S, 10-12:30. *Stimson* 206. Professor ADELMANN, Dr. BARDEN, and assistants.

For students in biology or those preparing for medicine. The cell and cellular origin of the body; the structure and development of its component tissues. Each student will prepare or receive a series of typical microscopic preparations. Laboratory fee, \$6.

S 104. Embryology of Vertebrates. Undergraduate and graduate; credit four hours. Prerequisite, a course in the histology of the tissues or a satisfactory equivalent in other biological work involving training in the use of the microscope. Lectures, T Th S, 9. *Stimson* G-1. Laboratory, M W F, 10-12:30. *Stimson* 206. Mr. BATES and assistants.

For students of biology or those preparing for medicine. Preparation and study of embryological specimens from all the chief groups of vertebrates. Emphasis is placed on the embryology of the chick. The student also acquires a knowledge of special methods useful in embryological work. Laboratory fee, \$6.

SECOND FIVE-WEEK SESSION

AUGUST 10-SEPTEMBER 12, 1942

Advance registration for this Session is required. Registration will begin on Monday, July 20, in the Summer Sessions office in Goldwin Smith Hall, and will continue through July 27.

Additional courses for this Session will be arranged as demands warrant. Groups of students, or individual students, who wish to have a particular course added are invited to report their requests to the Dean's office in Goldwin Smith Hall, or to the Summer Sessions office. In general, courses called for by fifteen students will be provided if staff and facilities are available.

CHEMISTRY

S 225. **Introductory Quantitative Analysis.** Shorter course. Undergraduate; credit three hours. Lectures, M W F, 10. *Baker* 207. Laboratory, M W F, 1:40-5; S, 9-1. *Baker* 252. Mr. WATTERS and assistant.

A study of the fundamental principles of gravimetric and volumetric analysis, and the analysis of various substances by these methods. Deposit, \$20.

ECONOMICS

S 11. **Money, Currency, and Banking.** Undergraduate and graduate; credit two hours. Daily, 9. *GS* 256. Professor REED.

An introductory study of the history and theory of money, currency, and bank credit.

S 31. **Corporation Finance.** Undergraduate and graduate; credit three hours. Daily, 8, and T Th, 2-3:30. *GS* 256. Professor ENGLISH.

A study of the financial practices of business corporations in the United States: types of corporate securities; sources of capital funds; determination and administration of corporate incomes; financial difficulties and corporate reorganization; the relation of corporate practices to the functioning of the American economic system; and the regulatory activities of the Securities and Exchange Commission.

S 40. **Labor Movements, Government Labor Policies, and Contemporary Industrial Relations.** Undergraduate and graduate; credit two hours. Daily, 10. *GS* 256. Professor MONTGOMERY.

A study of the problems of employer-worker relations, especially as affected by war conditions, of developments in the American labor movement, of government policies toward labor, and of factors that will determine the position of labor in the post-war world.

S 84. **Current Economic Problems and Social Trends.** Undergraduate and graduate; credit two hours. Daily, 11. *GS* 256. Professor MONTGOMERY.

An analysis of the more important social and economic trends of the last decade, of changes that are taking place in the economy, and of the problems consequent upon these trends and changes.

ENGLISH

S 39b. **American Literature since the Civil War.** Undergraduate and graduate; credit two hours. Daily, 8. *GS* 156. Associate Professor SALE.

A continuation of S 39 in the six-week Session. May be elected separately.

S 61b. **Shakespeare.** Undergraduate and graduate; credit two hours. Daily, 11. *GS* 156. Assistant Professor WILSON.

A continuation of S 61 in the six-week Session. May be elected separately. A study of the comedies, histories, and other selected topics.

ENTOMOLOGY

A 16. **Insect Ecology.** Undergraduate and graduate; credit three hours. Pre-requisite, Biology 1 or Zoology 1 and preferably general entomology. Lectures, daily, 9. *Comstock* 145. Laboratory periods to be arranged. Professor PALM.

This course is offered provisionally; it will be cancelled if the registration is insufficient.

A general study of insects in relation to their environment. Attention is given to life-history studies in the field and insectary; the role that insects play in different natural associations; the relations between structure, instinct, habitat, and ways of living. Photographing insects in natural color is included as a part of the course. Laboratory fee, \$3.50.

GOVERNMENT

S 21. Constitutional Law: Fundamental Rights and Immunities. Undergraduate and graduate; credit two hours. Prerequisite, Government 20 or the consent of the instructor. Daily, 11. *Boardman* 121. Professor CUSHMAN.

Privileges and immunities of citizenship; protection of civil and political rights; the obligation of contracts; due process of law and the equal protection of the laws.

HISTORY

S 19. American History: 1860-1900. Undergraduate and graduate; credit two hours. Daily, 10. *Boardman* 320. Professor DESTLER.

A general survey of the political, economic, and social developments of the United States from the election of Lincoln to the turn of the century.

S 21. History of American Foreign Relations: 1789 to the Present. Undergraduate and graduate; credit two hours. Daily, 12. *Boardman* 122. Professor DESTLER.

A century and a half of American relations with other powers. Domestic factors influencing foreign policy will be carefully examined.

SOCIOLOGY

S 3. Man and Culture. Undergraduate and graduate: credit two hours. Prerequisite, Sociology 2, Rural Sociology 1, or permission of the instructor. Daily, 8. *McGraw* 201. Assistant Professor SHARP.

This course is offered provisionally. It will be cancelled if the registration is insufficient.

Human origins, evolution, and racial differentiation; the prehistoric development of cultures and the cultural organization of selected primitive communities; factors involved in cultural change.

S 60b. Social Anthropology. Undergraduate and graduate: credit two hours. Prerequisite, Sociology 2 or permission of the instructor. Daily 11. *McGraw* 201. Assistant Professor SHARP.

This course is offered provisionally. It will be cancelled if the registration is insufficient.

Continuation of Sociology S 60, offered in the six-week session, but may be taken independently.

SPEECH AND DRAMA

S 2. Public Speaking. Undergraduate; credit three hours. Prerequisite, Public Speaking 1 or equivalent. Daily, 9 and T Th S, 12. *GS* 21. Mr. DE BOER.

This course is offered provisionally; it will be cancelled if the registration is insufficient.

Practice in the composition and delivery of speeches for various occasions, in parliamentary procedure, and in group discussion.

FIRST FIVE-WEEK SESSION

MAY 25-JUNE 27, 1942

Courses in this Session are primarily for undergraduates now in residence in Cornell University, but others may be admitted. The courses have been selected for two purposes: 1, to afford to students now in college an opportunity to carry on their studies during this period in order to graduate earlier; 2, to furnish to men about to enter national service instruction in subjects directly related to their future duties.

Advance registration for this Session is required; last date, May 11. Registration blanks may be obtained at the Summer Session office, 249 Plant Science Building. Additional courses in this Session will be arranged as demands warrant. Groups of students, or individual students, who wish to have a particular course added are invited to report their requests to the Dean's office in Goldwin Smith Hall. In general, courses called for by 15 students will be provided if staff and other facilities are available. All courses are offered provisionally, and courses with insufficient registration will be cancelled. Classes will begin on Monday, May 25, at the hours and places given below. Classes will meet six times a week in courses for two semester hours of credit, nine times a week in courses for three semester hours of credit. Final examinations will be held on Friday and Saturday, June 26 and 27.

BIOCHEMISTRY

S 314. Elementary Biochemistry. Undergraduate and graduate; credit three hours. Prerequisite, a course in organic chemistry. Lectures and conferences, daily, 9, and three periods a week to be arranged. *Dairy Industry* 218. Professor SUMNER.

The substances met with in living things, and the chief facts of digestion, metabolism, and nutrition.

BIOLOGY

A 5. Laboratory Methods in Biology. Undergraduate and graduate; credit two hours. Prerequisite, an introductory course in biology or zoology. Lectures, M W F, 10. Three additional periods to be arranged. *Roberts* 302. Dr. NEVIN.

For students who intend to teach or to follow some phase of biology as a profession. This course includes such subjects as: laboratory equipment; collection, preservation, and storage of materials; sectional and non-sectional preparations of animal tissues for histological study; injection of blood vessels and embalming; preparation of bird and mammal skins for study; chart making; introduction to photography including the preparation of lantern slides; use of micro projector; theory and use of 16-millimeter sound and silent projection apparatus. Laboratory fee, \$5.

CIVIL ENGINEERING

The following courses are offered provisionally for the period June 1 to July 10. Students taking these courses will register in the first five-week Session and will pay the usual tuition and other fees for that Session. For further details, address or consult Director W. L. MALCOLM, School of Civil Engineering, Cornell University.

DESCRIPTIVE GEOMETRY AND DRAWING

S 203. Drawing. Undergraduate; credit two hours. Second term of sophomore course. Hours to be arranged. Assistant Professor JENKINS.

MECHANICS OF ENGINEERING

S 221. Mechanics of Engineering. Undergraduate; credit four hours. Daily except Sat., 9 and 11. *Lincoln* 204. Assistant Professor HOWELL.

Mechanics of materials including stress and strain, tension, shear, compression, torsion, flexure; elastic curves; safe loads; columns; flexure of beams by semigraphic treatment. Review problems showing application of principles in Engineering Design. Textbook: George and Rettger, *Mechanics of Materials* (Third Impression).

S 221A. Mechanics Laboratory. Undergraduate; credit one hour. Fifteen periods, at hours to be arranged. *Mechanics Laboratory, Lincoln.* Assistant Professor HOWELL.

Concurrent with S 221. Experiments designed to illustrate the principles of Mechanics studied in S 221.

STRUCTURAL ENGINEERING

S 271. **Structural Design.** Undergraduate; credit three hours. Prerequisite, C.E. 270. Lectures, computations, and drawing. Daily, 8-10. *Lincoln* 107. Assistant Professor BURROWS.

An elementary course in steel design. Complete design, detail drawing, bill of material, and estimate of weight of a steel roof truss, a thorough plate girder railroad bridge. Floor systems of highway bridges. Text: Urquhart and O'Rourke, *Design of Steel Structures*.

S 280. **Concrete Construction.** Undergraduate; credit three hours. Prerequisite, C.E. 220, 221. Daily, 9-11. *Lincoln* 222. Assistant Professor PENDLETON.

Concrete materials, properties of plain concrete, its making and deposition; elementary theory of reinforced concrete as applied to columns, rectangular beams, and slabs; T-beams reinforced for compression; direct stress combined with flexure; retaining walls. Text: Urquhart and O'Rourke, *Design of Concrete Structures*.

ECONOMICS

S 2a. **Modern Economic Society.** Undergraduate; credit three hours. Lectures and recitations daily, 9, and M W F, 2. Mr. BRAY. *GS* 264.

A survey of the existing economic order, its more salient and basic characteristics, and its operation.

S 21b. **Accounting.** Undergraduate; credit three hours. Prerequisite an elementary course in Economics and some work in accounting. Lectures and recitations, daily, 9, and three practice periods a week. *GS* 256. Professor ENGLISH.

Capital stock accounts; bonds and their valuation; amortization, reserves and reserve funds, analysis of income statements and balance sheets.

ELECTRICAL ENGINEERING

The following courses are offered provisionally for the period June 1 to July 4. Students taking these courses will register in the first five-week Session and will pay the usual tuition and other fees for that Session. For further details address or consult Director W. A. LEWIS, School of Electrical Engineering, Cornell University.

S 405a. **Fundamentals of Electrical Engineering.** Undergraduate; credit three or four hours. Prerequisites, Physics 11 and 12, and Mechanics 3M21, or the equivalent. Hours to be arranged.

D.C. electric and magnetic circuits; d.c. motors, generators and control equipment; distribution and rates; simple a.c. circuits.

Equivalent to the recitation work in E.E. 405. Students who have satisfactorily completed only the laboratory work of E.E. 405 may register for four hours credit and receive credit equivalent to E.E. 405 upon completion of S 405a.

S 406a. **Fundamentals of Electrical Engineering.** Undergraduate; credit three or four hours. Prerequisite, E.E. 405 or the equivalent. Hours to be arranged.

A.C. circuits, measurements, and machinery; industrial applications; electronic apparatus. A study of fundamental electrical principles and machinery and the application of electrical equipment in industry.

Students who have satisfactorily completed only the laboratory work of E.E. 406 may register for four hours credit and receive credit equivalent to E.E. 406 upon completion of S 406a.

S 415, 416. **Principles of Electrical Engineering.** Undergraduate; credit three hours. Students deficient in E.E. 415 or E.E. 416 should consult the professor in charge of the course, as arrangements may be made to take parts of S 405a and S 406a which constitute the equivalent of E.E. 415 or E.E. 416. Hours to be arranged.

ENGLISH

S 5. **Modern Novels.** Undergraduate and graduate; credit one hour. M W F, 12. *GS* 156. Dr. DUFFY.

Lectures on modern fiction, with reading of representative novels and reports on them.

S 6. **The American Short Story.** Undergraduate and graduate; credit one hour. T Th S, 11. *GS* 160. Dr. DUFFY.

A study and discussion of the development of the short story from Hawthorne to the present day.

FLORICULTURE AND ORNAMENTAL HORTICULTURE

A 100. **Principles and Practices of Military Camouflage.** Undergraduate; credit one hour. Registration limited to 16; students are required to consult or correspond with the instructor before registering. T Th, 1:40-6. *Plant Science* 433. Associate Professor PORTER, other members of the staff, and representatives of the Department of Military Science and Tactics.

A theoretical and practical course in the principles and techniques of modern camouflage as related to tactical military operations and military installations. Lectures and demonstrations, indoor laboratory exercises, studies with scale models, and practical field problems, using dummy and military equipment, are included. This course is designed primarily for men who expect to enter some branch of national service but recognition of this course by military authorities after completion is not guaranteed. Laboratory fee, \$2.

GEOGRAPHY AND GEOLOGY

S 210. **Fundamentals of Geography.** Undergraduate; credit two hours. Daily, 10. *Geology lecture room, McGraw.* Professor VON ENGELN.

The basic facts of geography, organized to furnish an understanding of its general principles.

HOME ECONOMICS

E 120. **Home Nursing.** Undergraduate; credit one hour. M W F, 12. *Martha Van Rensselaer* NB 30. Mrs. PEABODY.

The home adaptation of hospital facilities and care; signs of illness and ways of caring for the patient in mild and chronic illness and convalescence; the care of emergencies until the doctor arrives; home care of a patient who is seriously ill, with members of the family caring for the patient under the supervision of a visiting nurse. Fee, \$3.

E 190. **Nutrition and Health.** Undergraduate; credit two hours. Daily, 11. *Martha Van Rensselaer* 426. Associate Professor BRUCHER.

For students who have had no previous training in human nutrition. The principles of nutrition, with emphasis on the nutrition of normal adults; the choice and use of food for achieving and maintaining health. Fee, \$2.

HOTEL ADMINISTRATION

H 115. **Military Personnel Administration.** Undergraduate; credit two hours. Prerequisite, permission of instructor. Daily, 8. *Warren* 125. Professor WINSOR.

A discussion of basic psychological and personnel problems and techniques incident to the selection, training, motivation, and disciplining of men under war conditions. As far as possible, actual cases and situations will be presented for analysis and discussion.

MATHEMATICS

S 14. **Computational Trigonometry.** Undergraduate; credit three hours. Prerequisite, a course in intermediate algebra. Daily, 8, and T Th S, 12. *White* 115. Mr. BISSINGER.

This course is designed for students who have had no trigonometry and who wish to secure a background for practical courses in navigation. The course will emphasize the solution of problems in plane and spherical trigonometry which depend upon the use of tables and computation. The course will not be accepted as adequate preparation for a course in calculus.

MECHANICAL ENGINEERING

The following courses are offered provisionally for the period June 1 to July 4. Students taking these courses will register in the first five-week Session and will pay the usual tuition and other fees for that Session. For further details, address or consult Director W. N. BARNARD, Sibley School of Mechanical Engineering, Cornell University.

DRAWING AND DESCRIPTIVE GEOMETRY

S 3C11. **Drawing and Descriptive Geometry.** Undergraduate; credit three hours. Hours to be arranged.

S 3C12. **Mechanical Drafting.** Undergraduate; credit three hours. Hours to be arranged.

MECHANICS OF ENGINEERING

The following courses are open to students from other universities, subject to the same requirements for admission as are made for Cornell students.

S 3M22a. **Strength of Materials.** Undergraduate; credit three hours. Prerequisite, Theoretical and Applied Mechanics, 3M21, or equivalent. Hours to be arranged.

Stress, strain; strength and elastic properties of materials in tension, compression, and shearing; riveted joints; torsion of shafts; helical springs; shear; moment, safe loading, and deflection of simple beams; eccentric loads; columns; impact loads.

S 3M23. **Hydraulics.** Undergraduate; credit two hours. Prerequisite, Theoretical and Applied Mechanics, 3M21, or equivalent. Hours to be arranged.

Hydrostatics: pressures and centers of pressure. Hydrokinetics: general equations of energies; orifices, weirs, nozzles, Venturi meters, etc.; losses of head; flow in pipe. Hydro-dynamics: forces on stationary and moving bodies.

S 3M24. **Applied Mathematics.** Undergraduate; credit three hours. Prerequisite, Theoretical and Applied Mechanics, 3M21, and Strength of Materials, 3M22a, or equivalent, but may be taken concurrently with S 3M22a. Hours to be arranged.

Curve plotting, choice of coordinates and scale, straight line plotting of simple equations; logarithmic plotting; fitting empirical equations to experimental data; first and second order differential equations; vibration problems in engineering; linear, torsional, and flexural vibrations without and with damping; forced vibrations; critical speeds.

EXPERIMENTAL MECHANICAL ENGINEERING

S 3X21. **Materials of Engineering.** Undergraduate and graduate; credit three hours. Prerequisite, General Chemistry 102, or the equivalent. Hours to be arranged.

An elementary lecture course in metallurgy, covering the process metallurgy of iron and steel, including iron ore and pig iron; the production of wrought iron, steel, and cast irons, and mechanical working operations. Particular emphasis is placed on the constitution and structure of metals and alloys, including the development and use of cooling curves and equilibrium diagrams; stressing the relationship between the nature, form, size and distribution of constituents to the mechanical and physical properties of materials. Heat treatment operations are studied with reference to their effects on the constitution and the mechanical properties of alloys. An introduction is given to methods of testing for the determination of the properties of materials.

METEOROLOGY

A 1a. **Meteorology.** Undergraduate and graduate; credit two hours. Lectures and discussions. Daily, 9. *Plant Science* 143. Professor MORDOFF.

This course is adapted to the needs of teachers and students in subjects for which the weather is an important factor, particularly teachers of general science, physical geography, and agriculture. It is designed to acquaint the student with the laws governing the primary and secondary circulation of the atmosphere, and with the development, progression, and conditions that attend cyclones, tornadoes, and other atmospheric phenomena. Attention is given to the principles and practice of weather forecasting from weather maps and from local observations. Students taking the course at the graduate level will be assigned additional work.

A 1b. **Meteorology, Laboratory Course.** Undergraduate and graduate; credit one hour. Laboratory, M W F, 1:40-4. Must be accompanied by course A 1a. *Plant Science* 114. Professor MORDOFF.

The work consists in the study of the principal weather and climatic elements with the aid of maps, charts, and instruments. The various meteorological instruments will be studied, as well as the methods of taking and recording the observations. Oppor-

tunity will be given the student for making practice forecasts. Students taking the course at the graduate level will be assigned additional work.

MILITARY SCIENCE AND TACTICS

S 1. Basic Course, Second Year. No credit. T or Th, 1:40-4:40. *Barton Hall.*

This course will begin on June 1, and will continue for 15 weeks, ending on September 12. Students registering in the first five-week Session who plan to continue through the summer in other Sessions may enter this course on June 1 and on completion of the entire course will receive credit for one term of the second year of required drill.

Students who plan to register for five weeks only may enter this course on June 1 to drill for the remaining four weeks. They will receive no credit.

S 2, 3, 4. Advanced Courses. See under departmental heading in FIFTEEN-WEEK SUMMER TERM.

PHYSICAL TRAINING

S 1. Physical Training for Men. No credit. Four periods a week, by arrangement. *Barton Hall.*

This course will begin on June 1 and will continue for 15 weeks, ending on September 12. Students in the first five-week Session who plan to continue through the summer in other Sessions may enter this course on June 1 and on completion of the entire course will receive 1 hour of credit.

Students who plan to register for five weeks only may enter this course on June 1 for the remaining four weeks. They will receive no credit.

PSYCHOLOGY

S 51. Psychotechnology. Undergraduate and graduate, credit two hours. Prerequisites, an introductory course in psychology and upperclass status. Daily, 11. *Morrill 306.* Dr. RYAN.

The results of research upon the selection and training of military and industrial personnel; factors in maintaining effectiveness at work.

RURAL EDUCATION

A 131. Introduction to Teaching Vocational Agriculture in Secondary Schools. Undergraduate and graduate; credit three hours. Prerequisite, a course in educational psychology, and permission of the instructor. Hours to be arranged. *Plant Science 141.* Professor STEWART.

For students preparing to teach vocational agriculture, and for teachers who wish to prepare in this field. Consideration of the organization of programs of instruction in vocational agriculture and of the problems involved in conducting a program. Laboratory fee, \$3.

A 133. Directed Teaching of Students in Agricultural Education. Undergraduate and graduate; credit two hours. Prerequisite, Rural Education 131, a course in educational psychology, and permission of the instructor. Hours to be arranged. Associate Professor HOSKINS.

For students in Rural Education who wish to complete certification requirements by work during this period. Fee, \$3.

A 143. Organization and Teaching of Technical Subjects. Undergraduate and graduate; credit six hours. Prerequisite permission of the instructor. Daily except Sat., 9-4. Professor EMERSON.

Curriculum construction and development of instructional materials for national defense training programs in industrial and technical high schools. Designed primarily for graduate students in industrial and technical education who have had some experience in the development of instructional materials. Deals with analysis of national defense industries for occupational training content; the organization of courses of study of pre-employment and trade extension type; and the preparation of instruction sheets and other aids to instruction. Students must consult or correspond with the instructor before registering.

SOCIOLOGY

S 2. **Group Morale.** Undergraduate and graduate; credit two hours. Prerequisite, permission of the instructor. Daily, 10. *McGraw* 201. Professor COTTRELL.

Analysis of the social psychological factors affecting group morale. Problems of morale in business and industry, the community, and the nation will receive special attention. The course is designed for students interested in personnel administration and group work as well as for those who expect to have responsibility of leadership in organized social, economic, and political activities.

SPEECH AND DRAMA

S 1. **Public Speaking.** Undergraduate; credit two hours. Daily, 11. *GS* 236. Mr. OWENS.

The course is planned to give the fundamentals of speech preparation and to develop simple and direct speaking. It includes the study of principles, constant practice, and conferences.

ZOOLOGY

S 303. **Human Physiology.** Undergraduate; credit three hours. Lectures and recitations, daily, 8, and T Th S, 12. *Moore Laboratory* 101. Associate Professor DYE.

An introductory course for students in all colleges.

FIFTEEN-WEEK SUMMER TERM

JUNE 1-SEPTEMBER 12, 1942

The following courses are offered primarily for students in the College of Engineering, but others may take them by registering in the first five-week and the eleven-week Summer Sessions.

CHEMISTRY

S 220. Introductory Quantitative Analysis. Undergraduate; credit three hours. Must be taken with course 221. Lectures, T Th, 9. Recitations, 1 hour a week, M W or F, 9. *Baker* 207. Professor NICHOLS and assistants.

A study of the fundamental principles of gravimetric and volumetric analysis with practice in stoichiometry.

S 221. Introductory Quantitative Analysis. Undergraduate; credit three hours. Must be taken with course 220. Laboratory sections: M, 9-4 and T, 11; F, 9-4 and S, 9-1. *Baker* 252. Professor NICHOLS and assistants.

Laboratory practice in the preparation and standardization of various volumetric solutions and the analysis of a variety of substances by volumetric and gravimetric methods. Deposit, \$25.

S 305. Introductory Organic Chemistry. Undergraduate; credit six hours on completion of the course. Prerequisite, qualitative analysis. Daily, 8. *Baker* 107. Professor JOHNSON and Assistant Professor MILLER.

Lectures and written reviews. The more important compounds of carbon, their occurrence, methods of preparation, relations, and uses.

S 310. Introductory Organic Chemistry. Undergraduate; credit three hours. Prerequisite or parallel course, Chemistry 305. Laboratory sections: A, M T W, 10-12:30 and 1:30-4; B, Th, 10-12:30 and 1:30-4, F, 10-12:30 and 1:30-5, S, 9-1. *Baker* 250. Assistant Professor MILLER and assistants.

Laboratory practice and oral reviews. The student prepares a large number of typical compounds of carbon and familiarizes himself with their properties, reactions, and relations. Deposit, \$40.

S 405. Introductory Physical Chemistry. Undergraduate and graduate; credit three hours. Prerequisite, Chemistry 305, Mathematics 60a and 60b, Physics 11 and 12, or their substantial equivalent. Lectures, M W F, 8 and 9. *Baker* 7. Professor BRIGGS and assistants.

A systematic presentation of modern physical chemistry. The topics include: the properties of gases, liquids, and solids; physical and chemical equilibrium in homogeneous and heterogeneous systems; the Mass Law, theorem of Le Chatelier, and the Phase Rule; thermochemistry and elementary thermodynamics; the theory of solutions; ionic equilibria and the concept of activity; chemical kinetics and catalysis; photochemistry; written problems in physical chemistry.

S 410. Introductory Physical Chemistry. Undergraduate and graduate; credit three hours. Laboratory and recitations. Prerequisite or parallel course, Chemistry 405. Laboratory sections: M T or Th F, 10-4. Two recitations to be arranged. *Baker* 1. Assistant Professor HOARD and assistants.

Qualitative and quantitative experiments illustrating the principles of physical chemistry and practice in performing typical physico-chemical measurements. Recitations on the general principles of physical chemistry, based upon the lectures. Deposit, \$20.

S 755. Materials of Construction. Undergraduate and graduate; credit two hours. Prerequisite or parallel course, Chemistry 405. T Th, 8-10. Professor MASON.

A discussion of the important structural materials used in chemical engineering. Required of third-year students in Chemical Engineering.

MILITARY SCIENCE AND TACTICS

S 1. **Basic Course, Second Year.** Undergraduate; credit one hour. T or Th, 1:40-4:40. *Barton Hall.*

Required of all able-bodied first and second year male students in the University.

S 2. **Advanced Field Artillery Course.** Undergraduate; credit one or two hours. Prerequisite, Basic Course in Field Artillery and permission to enroll. Hours by arrangement. *Barton Hall.*

S 3. **Advanced Signal Corps Course.** Undergraduate; credit one or two hours. Prerequisite, Basic Course in Signal Corps, Physics 21, and permission to enroll. Hours by arrangement. *Barton Hall.*

S 4. **Advanced Ordnance Course.** Undergraduate; credit one or two hours. Prerequisite, Basic Course in Field Artillery or Basic Course in Signal Corps, and permission to enroll. Hours by arrangement. *Barton Hall.*

PHYSICS

S 21. **General Physics.** Undergraduate; credit three hours. Given during the first seven and a half weeks. Prerequisites, Physics 11 and 12 and a course in Calculus. Lectures and recitations, M T Th F, 8 and one laboratory period a week to be arranged. Laboratory open, T Th, 1:40-4 and S, 8-10:30. Dr. GIVENS.

Theory, problems, and laboratory work covering selected topics in Electricity and Magnetism. Required of candidates for the degree of B.M.E., B.E.E., and B. Chem. E. Laboratory fee, \$2.50.

S 22. **General Physics.** Undergraduate; credit three hours. Given during the second seven and a half weeks. Prerequisites and schedule as for S 21. Dr. GIVENS.

Theory, problems, and laboratory work covering selected topics in thermionics, photoelectric effect, light and heat. Required of candidates for degrees of B.M.E., B.E.E., and B. Chem. E. Laboratory fee, \$2.50.

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 HARLEY EARLE HOWE, Ph.D., Professor of Physics.
 MELVIN LOVELL HULSE, Ph.D., Associate Professor of Education.
 WALLIE ABRAHAM HURWITZ, Ph.D., Professor of Mathematics.
 MARGARET HUTCHINS, A.M., Instructor in Rural Education.

- JAMES HUTTON, Ph.D., Professor of Classics.
 RONALD INGALLS, B.Mus., Assistant Professor of Music.
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INDEX

- Academic Credit, 7.
- Accounting, 27, 47, 65, 66.
- Administration, Educational, 31.
- Administrative Board, 72.
- Administrative Engineering, 66.
- Admission.
 - Application for, 4, 79.
 - Colleges of Cornell University, 8.
 - Graduate School, 4, 9.
 - Hotel Administration Courses, 47.
 - Summer Sessions, 4.
- Advisers.
 - College of Agriculture, 8.
 - College of Home Economics, 8.
- Agricultural Economics, 22.
- Agricultural Engineering, 22.
- Architecture, College of, 3.
- Apartments, 16.
- Army Programs, 21.
- Arrangement of Subjects, 22.
- Arts and Sciences, College of, 8.
- Astronomy, 23.
- Auditors' Permits, 6.
- Automobile Regulations, 14.

- Bacteriology, 24.
- Balch Halls, 14.
- Biochemistry, 64.
- Biology, 24, 57, 64.
- Board, 15, 16.
- Botany, 24.

- Cafeterias, etc., 16.
- Calendar, Summer Session, 2.
- Certificates of Summer Record, 7.
- Certificates, Teachers', 28.
- Changes of Registration, 6.
- Chapel, 18.
- Checks, Cashing of, 14.
- Chemistry, 25, 57, 62, 70.
- Chorus, 18.
- Class Schedules, 22.
- Classrooms, 22.
- Clothing, 46.
- Committees, Special, 9, 10, 11.
- Concerts, 18.
- Conduct, Regulations Governing, 13.
- Conferences, 28.
- Cost of Living, 16.
- Credit.
 - Colleges of Cornell University, 8.
 - Graduate School, 7, 11.
 - Institutions other than Cornell University, 8.
 - Maximum, 7.
- Curriculum Workshop, 33.

- Deposits.
 - Chemistry Courses, 25, 57.
 - Laboratory, 12.
 - Library, 12, 17.
 - With Applications for Rooms, 16.
- Dining Rooms, etc., 16.
- Doctor's Degrees, 10.
- Doctors, Resident, 11.
- Dormitories, 14.
- Drama, 53.
- Drawing, 26.
- Drawing, Engineering, 67.

- Economics, 27, 62, 65.
- Education, 28, 68.
 - School of, 11, 28.
 - Health, 39.
 - Physical, 50.
- Educational Method, 29.
- Educational Psychology, 28.
- Electrical Engineering, 65.
- Eleven-week Session, 57.
- Embryology, 61.
- Emergency Programs, 20.
- Engineering, 22, 64, 65, 66.
- Engineering, College of, 3, 8.
- English, 34, 58, 62, 65.
- Entomology, 35, 62.
- Examination Schedule, 56.
- Excursions, 19, 37.
- Expenses, 16.
- Experimental Engineering, 67.

- Faculty, 72.
- Family Life, 43.
- Farm Management, 22.
- Fees, 10.

- Health Service, 12.
- Laboratory, Shop, etc., 12.
- Matriculation, 12.
- Music, 12, 49.
- Parking Permit, 12, 14.
- Special Regulations, 13.
- Swimming, 12, 50.
- Tennis, 12, 50.
- Tuition, 12.
- Willard Straight Hall, 12.
- Field School in Geology, 37.
- Field Trips, 19, 37.
- Fifteen-week Term, 70.
- Fine Arts, 58.
- First Five-week Session, 64.
- Foreign Students, 14.
- Floriculture, 35, 66.
- Foods, 44.
- French, 36, 58.
- Freshmen, Admission of, 4, 8.
- Genetics, 36.
- Geography, 37, 66.
- Geology, 36.
- Geology, Field School, 38.
- German, 39, 58.
- Government, 39, 58, 63.
- Graduate Courses, 7.
- Graduate School.
 - Admission, 4, 9.
 - Credit, 7, 11.
 - Examinations, 9, 11.
 - Language Requirements, 10.
 - Non-candidates, 11.
 - Registration, 5, 11.
 - Requirements for Degrees, 9, 10.
 - Residence Requirements, 9, 11.
 - Resident Doctors, 11.
 - Special Committees, 9, 10.
- Guidance, Educational, 33.
- Health Education, 39, 59.
- Health Service, 17.
- Histology, 61.
- History, 39, 63.
- History of Education, 34.
- Home Economics, 41, 66.
 - N. Y. State College of, 8.
- Home Nursing, 39, 43, 66.
- Horticulture, Ornamental, 35, 66.
- Hospital Operation, 47.
- Hotel Administration, 8, 46, 66.
- Household Art, 45.
- Household Economics, 41.
- Household Management, 41.
- Hydraulics, 67.
- Industrial Arts, 32.
- Infirmity, 17.
- Institution Management, 45.
- Landscape Construction, 35.
- Late Registration, 6.
- Latin, 47, 59.
- Law School, 3.
- Lectures, 18.
- Libraries, 17.
- Master's Degrees, 9.
- Mathematics, 47, 59, 66.
- Matriculation Fee, 12.
- Maximum Credit, 7.
- Measurements, Educational, 29.
- Mechanics of Engineering, 67.
- Medical Clinic, Student, 17.
- Medical College, 3.
- Meteorology, 48, 67.
- Method, Educational, 29.
- Microscopy, Chemical, 66.
- Military Camouflage, 66.
- Military Science, 60, 68, 71.
- Military Training, 20, 60, 68, 71.
- Motor Vehicles, 5, 6, 12, 14.
- Music, 49.
- Navigation, 23.
- Navy Programs, 21.
- Non-candidates in Graduate School, 11.
- Nutrition, 44.
- Observatory Demonstrations, 19, 24.
- Office of Summer Sessions, 2.
- Officers, 72.
- Orchestra, 19, 49.
- Ornamental Horticulture, 35, 66.
- Ornithology, 49.
- Painting, 26.
- Parking Permits, 12, 14.
- Phonetics, 54.
- Philosophy, 60.
- Physical Chemistry, 70.

- Physical Education, 50, 60.
- Physical Training, 60.
- Physics, 21, 50, 60, 71.
- Plant Pathology, 51.
- Plant Physiology, 24.
- Political Science, 39, 58, 63.
- Pre-medical Courses, 21.
- Principles of Education, 34.
- Psychology, 52, 68.
- Psychology, Educational, 28.
- Public Events, 18.
- Public Speaking, 53, 63, 69.

- Registration, 5.
 - Change of, 6.
 - For Attendance, 6.
 - Graduate School, 5, 11.
 - Late, 6.
 - Minimum Schedule, 6.
 - Motor Vehicles, 5, 6, 14.
- Regulations, Special, 13.
- Resident Doctors, 11.
- Residential Halls, 14.
- Risley Hall, 15.
- Romance Languages, 36, 53, 58, 60.
- Rooms.
 - Applications for, 15.
 - For Men, 15.
 - For Women, 14.
- Rural Education, 28, 68.
- Rural Sociology, 53.
- Russian, 52.

- Sage Chapel, 18.
- Schedule, Minimum, 6.
- Schedule of Examinations, 56.
- Schedules, Class, 22.
- Scholarship Regulations, 13.
- School of Education, 11, 28.

- Second Five-week Session, 62.
- Self-support, Means of, 16.
- Six-week Session, 22.
- Sociology, 53, 63, 69.
- Spanish, 53, 60.
- Special Regulations, 13.
- Speech and Drama, 53, 63, 69.
- Speech Clinic, 54.
- Sports, 20.
- Structural Engineering, 65.
- Summer Terms, 3.
- Supervision, Educational, 31.

- Teachers' Courses.
 - Agriculture, 30, 31.
 - English, 29.
 - Home Economics, 30, 31, 42.
 - Industrial Arts, 32.
 - Latin, 47.
 - Mathematics, 48.
 - Natural History, 30.
 - Phonetics, 54.
 - Speech Training, 54.
- Textiles, 46.
- Theatre, 19, 55.
- Tuition Fees, 12.

- Undergraduate Courses, 7.

- V-I Program, 21.
- Veterinary Medicine, College of, 3.
- Vocational Guidance, 33.

- Willard Straight Hall, 12, 18.
- Withdrawal from Summer Session, 7, 13.
- Workshops, 28, 33, 40.

- Zoology, 55, 60.

Because the edition of this Announcement is limited, persons planning to register in the Summer Sessions are asked to bring their copies with them.

CORNELL UNIVERSITY SUMMER SESSIONS, 1942

Application for Admission

Name
 Family name *Full first name* *Middle name*

Address
 Street and number *City or town* *State*

Please check Session or Sessions which you plan to attend:

..... First five-week ; Six-week ; Eleven-week ; Second five-week.

A. School, College, and Graduate Training:

Please check items to indicate your training, and fill out blanks next following the items checked.

.....Now in High School

.....
 City or town *State* *To graduate (year)*
High School Graduate

.....
 City or town *State* *Year of graduation*
Now in College or Normal School

.....
 Institution *Location* *To graduate (year)*
College or Normal School Graduate

.....
 Institution *Location* *Degree* *Year*
Now in Graduate School

.....
 Institution *Location* *Degree expected* *Year*
Holder of Advanced Degree

.....
 Institution *Location* *Degree or degrees, Year granted*
 If you are applying for admission to any School or College of Cornell University, or of another institution, give information here.

.....
 Institution *School or college* *To enter (date)*
 If you have attended a school of a sort not listed above (a technical institute, for example), give pertinent information here.

B. School Position:

If you hold a position of any kind in a school, college, or other educational institution, please check items to indicate your position and fill out blanks next following the items checked.

.....Substitute or Temporary Teacher

<i>School</i>	<i>Location</i>	<i>Position and subject or grade</i>
.....Teacher		

<i>School</i>	<i>Location</i>	<i>Position and subject or grade</i>
.....Supervisor, Principal, Superintendent, etc.		

<i>School</i>	<i>Location</i>	<i>Position</i>
.....Assistant or Instructor in Normal School or College		

<i>Institution</i>	<i>Location</i>	<i>Position and subject</i>
.....Assistant Professor, Professor, etc.		

<i>Institution</i>	<i>Location</i>	<i>Position and subject</i>
.....Other School Positions		

<i>Institution</i>	<i>Location</i>	<i>Position and subject</i>
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C. Other Professional, Scientific, or Business Position:

If you hold a professional, scientific, or business position and your proposed attendance at the Cornell Summer Sessions is connected with this position, please give details below. (Examples: librarian in public library; research chemist; landscape architect; county agricultural agent; hotel room clerk).

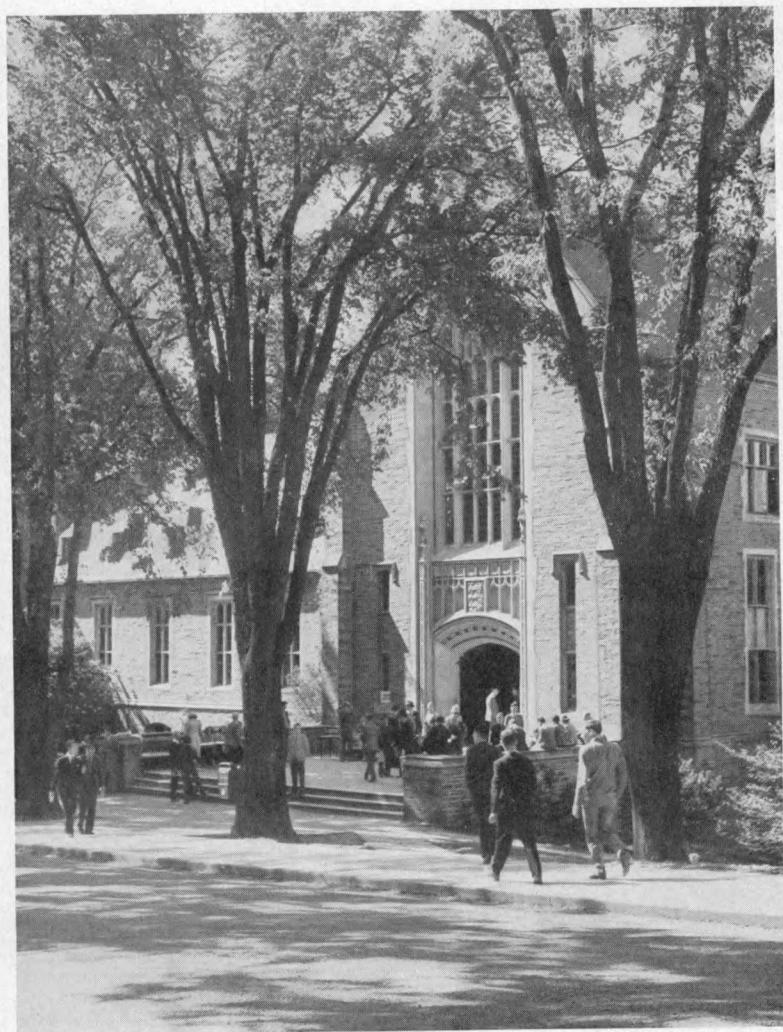
D. Previous Attendance at Cornell University:

.....Please check here if you have previously attended Cornell University, either in the regular term or in a Summer Session.

E. Reason for Proposed Attendance at Cornell Summer Sessions:

In not more than two or three sentences state your purpose in attending the Cornell Summer Sessions.

Mail this application to the Director of the Summer Sessions, Cornell University, Ithaca, N. Y.



Willard Straight Hall, built in 1925 as a memorial, is the social center of the University.



The campus lies at the south end of Cayuga Lake and four hundred feet above it. The Library Tower and Barton Hall appear at the left; beyond Beebe Lake, on the right, is Balch Hall, one of the residential halls for women. Buildings of the State Colleges of Agriculture and Home Economics occupy the center foreground.